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# HEALTH

EDITED BY

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## Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

THE Sixth Annual Congress of the Sanitary Institute of Great Britain, held at Glasgow last week, passed off most successfully. We do not remember to have seen a Congress at which a larger selection of varied, interesting, and practical papers was presented. From the President's address downwards, the communications were thoroughly enjoyable, and the Congress of this year, in respect of the fulness of its details, will certainly redeem the Sanitary Institute from any suspicion of the *dilettantism* which too often creeps over the spirit of such gatherings. That the people cannot hear too much about health and physical well-being is a sound maxim. Despite educational advance, a knowledge of even the simplest laws of health lingers long. Educated persons are daily found breaking or neglecting these vital laws, and misery, pain, and expense are continually appearing before us as the results of the contravention of health conditions seen in all classes and ranks of society. It is clear that, the wider the scope which sanitary institutes and associations give themselves, the greater will be the amount of benefit which will accrue from their labours. Every man, woman, and child who is made to think even a single thought about health and its problems, represents a recruit to the great army of reformers. All health improvement means and includes individual effort, and flourishes only upon the intelligent culture of health-science in the family and home.

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PROFESSOR HUMPHRY'S Presidential address at Glasgow was eminently enjoyable. Perhaps the speaker was at his best when he dealt with educational questions in relation to health. His tilt against the cram system was effective, and his prescription of the gymnasium and lawn-tennis court, as antidotes to and preventives of over-study in both sexes, should be laid to heart by all who have to do with the health of students.

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THE remarks of Dr. Humphry on "Ventilation" dealt with an old and venerable health-topic. He showed what people, as a rule, do not yet recognise—namely, that a room, as ordinarily built, is a closed box, but for the chimney and the accidental misfitting of doors and window-sashes, which serve as entrances for the air. Again, the ventilation of bedrooms is notoriously neglected; and, when it is considered that in the long hours of sleep we are at the mercy of the atmosphere which pervades the apartment, the necessity for repose amidst pure air is readily enough justified. If Dr. Hinckes Bird's plan were better known, much of the weariness and many of the headaches produced by the non-ventilation of our bedrooms would be avoided. The plan in question is simplicity itself. Raise the lower sash of the window about three or four inches; fill up the open space by a block of wood, so that the lower sash will rest thereon. This being done, it follows that the top of the lower sash rises above the bottom of the upper sash, and a current of air thus flows in between the two sashes without draught or annoyance.

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THE addresses of Professor Gairdner and Dr. Richardson dealt with topics of high sanitary import. The title of Dr. Richardson's discourse, "Felicity as a Sanitary Research," was, in itself, "a happy thought." The happiness which health purchases for us is, in reality, the root of all other modes and forms of felicity. No one can look any question fairly and well in the face who is not a healthy being. Contrariwise, even moderate ill-health is often sufficient to distort our views of life, and to render us unfitted for the free and perfect discharge of all our duties. In man's bargaining for happiness with the powers that be, health must count, in the opinion of all who face the question fairly, as the primary condition for felicity.

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IN addition to the list of contributors to the new volume of HEALTH, whereof the present number is the first, we have to add the names of Dr. Drinkwater, F.C.S., Lecturer on Chemistry in the Edinburgh Medical School, who will contribute a series of papers on that all-important topic, "Food Adulteration." Dr. Riches will also contribute papers on "Hygiene in Relation to Education and Youth."

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THE question of the similarity between the diseases of lower animals and those of men has often been raised. Here is an item which would seem to tell in favour of the identity of an affection in the human subject and in an animal tolerably far removed from man in structure. We know that monkeys suffer from and die of the same diseases which affect humanity, but it might be supposed by many that there was a great gulf betwixt the maladies of man and the equine race. This is not the case. Many diseases of lower life (*e.g.*, farcy and glanders in the horse) are transmissible to man; and the latest piece of information proves the likeness between human and equine troubles to be very close. A horse was affected with severe rheumatism, and in the treatment of this disorder a drug which proves highly beneficial to man—namely, salicylate of soda—was administered in drachm doses every two hours. The result was highly satisfactory. After twenty-four hours of this treatment the horse was much relieved, and in ten days had completely recovered.

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A LITTLE practice is proverbially worth any amount of bare precept; and the vegetarians appear to illustrate the foregoing axiom. The question of the science of diet was recently raised, and Mr. Doremus, an ardent "food-

reformer," offers himself as a subject for experimentation on the side of the vegetarians. In his letter to the *Lancet*, Mr. Doremus offers himself "as a person the medical profession may perform experiments upon for any space of time, from one week upwards." He offers to live, as he has often lived, absolutely without animal food, his confidence being unbounded in the superiority of vegetable over the common dietary. We do not think that, after all, the experiment would be in any way a decisive one. Mr. Doremus is an individual, not a crowd, and of all things it is most dangerous to argue from particulars to universals in the matter of foods. Because A does well on a vegetable dietary is no reason for the assumption that B and C will flourish thereon. The whole matter is one of individual experience, and we cordially commend Dr. Swanwick's remarks in our present number to all interested in the question of foods.

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We learn that the Bavarian Minister of Education has prohibited in the schools under his charge the use of small squares, which are ruled over writing-paper for the purpose of guiding children in the formation of regular characters. The medical authorities who have been consulted by the Bavarian Government in this matter have condemned these rulings; and it might be well for our home authorities—parents and guardians—to see that such devices, if used at all, are abolished in our own educational systems.

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An interesting case in connection with the subject of hydrophobia has recently been reported. A domestic servant, aged 43, whilst visiting at a friend's house, and against the wish of her friend, attempted to soothe a cat which was described as being "mad." The animal bit her on the right wrist, but the occurrence created no alarm at the time, and the patient continued her daily duties until the 22nd ult., when, becoming ill, she was sent under medical advice to hospital. After a short illness she died, according to the medical evidence, of hydrophobia from the cat's bite; and the jury officiating at the inquest gave a verdict accordingly. The newspaper from which the above account is taken contains the report of the death, at Manchester, of a boy six years of age, from the same disease. In the latter case death supervened from the bite of a retriever dog, the injury having been inflicted in August last. It is interesting to note that in the case of the boy some men are reported as having sucked the wound, which was also cauterised by a chemist. In a month's time, however, fatal symptoms appeared, and the boy died from the dreaded disease in great agony. The lesson that excision or cutting out of the wounded part is the only safe treatment seems to be taught by the latter case.

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The Parisians are being duly warned against the injurious effects of the lead contained in the oilcloths used for covering tables, for lining children's carriages, and like purposes. It is said that injury arises from contact of the lead with the skin, and that vinegar allowed to come in contact with the oilcloth would form "sugars" or "acetates" of lead, which are soluble. When we learn that such cloths can be manufactured without the employment of lead, health-laws should be equal to compelling the makers to eliminate lead-preparations from their stock of materials.

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

# Original Essays

"Life is not to live, but to be well."—*Martial.*

## MEDICO-ELECTRICAL APPLIANCES AND THEIR EMPLOYMENT AS AIDS TO HEALTH.

By Wm. Lant Carpenter, B.A., B.Sc.

SEVENTH PAPER.

In the last article we explained at some length the meaning of that very important law by which the strength of electric currents is determined, known as Ohm's law, and we pointed out that practical consequences of the highest moment might be deduced from it, in regard to the proper arrangement of batteries according to the work which they were required to do. It was shown that the question was mainly one of resistance in the circuit, but that this resistance ought to be considered in two separate parts, the resistance external to the battery and the internal resistance of the battery itself. Where the external resistance is high, as is almost invariably the case in any of the medical applications of electricity, the strength of the current passing is affected in only a very small degree, even by a high internal resistance in the battery; but where the external resistance is low, this latter becomes a very important factor in calculating the strength of the current passing through the circuit. If this current be denoted by C, the external resistance by R, the internal by $r$, and the electro-motive force (see previous article) by E—then, according to Ohm's law, $C = \frac{E}{R+r}$.

In practice the determination of R is at times somewhat difficult, owing to its being made up of a number of different resistances—wires, electrodes of various kinds, &c., &c. In electrical measurements, the unit of resistance is called the Ohm, and its amount is that offered by a column of pure mercury of a certain length and sectional area. The unit of electro-motive force (E.M.F. or E) is the Volt, and, for practical purposes, may be taken as the E.M.F. of a single cell of Daniell's battery in good working order. As before pointed out, *the size of the cell has no influence whatever* upon its E.M.F.—a point too often quite lost sight of.

Probably the first occasion upon which public attention, and even the attention of electricians, was drawn to the need of measurement when using electricity for medical purposes, was in a paper entitled "On Measurement in the Medical Application of Electricity," by Dr. W. H. Stone, physician to St. Thomas's Hospital, and Dr. W. J. Kilner, read before the Society of Telegraph and Electrical Engineers, on March 9, 1882. Many leading electricians were present, who expressed their strong sense of the great value of Dr. Stone's experiments, and of the great progress which had been made in the medical application of electricity, since it was thus shown to be capable of being so exactly measured, and expressed in terms familiar to electricians.

To describe the way in which the actual measurements of Volts and Ohms are made would be beyond the scope of these articles, since it would involve an amount of technical detail uninteresting, and, perhaps unintelligible, to many readers. It is sufficient to say here that the principles of the instruments employed, galvanometers, voltameters, &c., have been already described in Articles III. and IV. of this series, and that in making the measurements, careful comparisons are always made with standard instruments. One such standard is called a resistance

box, and by slight alterations in it, resistances of from 1 Ohm up to 100,000 Ohms may be measured. For E.M.F., a standard cell of peculiar construction is used, with an E.M.F. of 1·457 Volt. For special kinds of measurements, in which may be included medical ones, it is possible to contrive instruments on which may be read off, with little or no calculation, the amount of current that has passed through a given circuit in a known time, or is passing at a particular moment. Dr. J. A. Fleming (of the Edison Light Company) has paid special attention to the construction of such instruments suitable for medical purposes, so that it will be possible in future for a medical man to prescribe with certainty a given dose of electricity; one is a galvanometer of special construction, and the other a new kind of voltameter, in which the gases evolved from the decomposition of water are collected. The unit of current is called the Ampère—hence, from Ohm's law :—

$$\text{Current in Ampères} = \frac{\text{E.M.F. in Volts}}{\text{Total circuit resistance in Ohms.}}$$

In the course of some experiments with Mr. Pulvermacher's appliances, it appeared that the electro-motive force of his elements, whether chain-bands or chain-batteries, was in each case as nearly as possible one Volt per element, and, as both his bands and chain batteries contain a number of elements connected together in series, their E.M.F. may be obtained with a near approach to accuracy by counting the number of separate elements in each appliance. The same remark would apply to a number of cells of Daniell's battery, joined up in series. The E.M.F. of the medical Leclanché batteries previously alluded to is about 1·5 Volt per cell, and that of a so-called medical battery with zinc and carbon, especially constructed for the use of medical men, was, under the same circumstances, about 1·3 Volt. It should be carefully noted, however, that when the circuit is kept closed for any time, as is usually the case in the medical applications of electricity, the E.M.F. of most batteries falls very rapidly, from the internal polarisation explained in former articles. Daniell's battery is one of the very few which is tolerably free from this defect, and Pulvermacher's chain-bands, &c., are also, in consequence of atmospheric depolarisation (article V.). The internal resistance of a battery varies with its liquid contents, and, other things being equal, depends much upon its size; that of a quart Daniell, for example, being only about 2 Ohms, while that of a Pulvermacher element of the ordinary small size may be as much as 70 or 80 Ohms. As pointed out in the last article, although this would be a serious disadvantage to their use where the external resistance was small, it is a matter of comparatively small moment where they are employed on circuits of high resistance, such as the human body; hence our readers will be quite prepared for the statement that with four or five such tiny elements arranged in series, the writer was able to make perfectly distinct galvanometer (*i.e.* telegraphic) signals through a circuit exceeding in resistance that of an Atlantic cable!

A series of very careful measurements were made with some of those so-called electric belts before alluded to, containing discs or plates of zinc and copper (or other metal) attached to a band of some strong textile fabric, for which it is claimed that an electric current is excited by them when the discs are worn in contact with the skin. As might be expected, the experiments were almost negative in their result; but when the skin was exceedingly moist, and extremely delicate instruments were used, a minute current was detected, amounting to a few hundred-thousandths of an Ampère. Even this minute current was, from the construction of the belt, confined to two or three square inches of the surface of the body.

Allusion has been frequently made in this series of articles to the enormously high resistance of the epidermis, or outer scarf-skin, *in its normal condition.* In that state, as is well known, the cells which compose it are comparatively dry and hard, and in that condition scarcely allow any electricity to pass; but when the spaces between these cells, as well as between the cell-walls themselves, are filled up with water, or, still better, with some liquid whose conducting power is greater than that of water, the current passes readily through the skin. Such a condition, however, is only attained by a somewhat prolonged soaking of the skin in water, or in some liquid conductor as, *e.g.*, salt and water. The following experiment illustrates this. Into the feet of a pair of socks were fastened soles of tinfoil, connected with a constant-current battery and with measuring instruments. The socks having been put on, and the experimenter standing in them, the resistance in this circuit was measured with the dry skin, and found to be 10,300 Ohms. The feet were then put into two separate vessels of salt and water, and the resistance was measured at frequent intervals, with the following results :—

| | Min. | Ohms. | | Min. | Ohms. |
|---|---|---|---|---|---|
| Dry skin ..... | — | 10,300 | Salt and water. | 25 | 1,470 |
| Salt and water ... | 1 | 4,300 | ,, | 30 | 1,400 |
| ,, ... | 5 | 2,500 | ,, | 35 | 1,290 |
| ,, ... | 7 | 2,100 | ,, | 40 | 1,250 |
| ,, ... | 10 | 1,900 | ,, | 45 | 1,230 |
| ,, ... | 15 | 1,720 | ,, | 50 | 1,200 |
| ,, ... | 20 | 1,540 | ,, | 60 | 1,190 to 1,200 |

The practical conclusion from this experiment is that five minutes' immersion in salt and water reduces the skin resistance by more than 75 per cent., and ten minutes' immersion by more than 80 per cent.; or, in other words, that after five minutes' soaking, *four times as much current passed;* and after ten minutes, five times as much, as with a dry skin, with the same battery. Several other experiments of a like character were made on other parts of the body with similar results, all showing the *paramount necessity of thoroughly soaking the skin* before applying the current. Experiments with electrodes of various sizes showed what a great influence the size of the electrodes in contact with the skin had upon the amount of current passing; and also that when they were sufficiently large (a few square inches in surface) the prolonged action of a powerful current did not inflame the skin, nor did it affect its conducting power in any perceptible degree. Small electrodes, however, with a powerful current, inflamed the skin locally, and rendered it a better conductor.

In what has been already said, no mention has been made of the measurement of induced, or rather of alternate, currents. This is a more difficult matter than with continuous currents, and is best done with an electro-dynamometer which depends for its action upon the repulsion between two wires in which currents are flowing in opposite directions. The description of the method, however, would be out of place here.

In the next article of this series, we hope to give our readers some account of Professor McKendrick's lecture on Galvani and Animal Electricity, delivered before the British Association for the Advancement of Science at its Southport meeting, in which lecture the audience was referred for further information upon certain points, to this series of articles in HEALTH.

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# HYDROPHOBIA: ITS NATURE, CAUSES, AND TREATMENT.

By Dr. Andrew Wilson, F.R.S.E.

SIXTH PAPER.

Our papers would be incomplete without a reference to the means adopted for the prevention and cure of hydrophobia, seeing that the previous statements naturally lead up to such a conclusion. We have already indicated a very important duty—not merely on the part of the public at large, but especially on that of the police—at the outset of these remarks—that of distinguishing between a case of true rabies and where an unfortunate dog is suffering from a fit, or, what is a more common case, where a dog pursued and hunted by boys is regarded as mad. If the public have to choose between the alternatives of "mad dog" and "dog in a fit," they will be on the correct side in nine cases out of ten if they adopt the latter opinion. Rabies, after all is said and done, is not a common affection, but is one, nevertheless, which a diseased public imagination will cause to be regarded as alarmingly prevalent. Suppose, however, that a rabid dog has inflicted a wound, the main and important question of "what is best to be done" has to be answered on the spot, and, it may be, by the non-professional bystander. It argues powerfully in favour of the movement for teaching the principles of human physiology in all our schools, that the answer to this question is readily forthcoming from a consideration of the subject of the blood circulation, and of the means to be taken for preventing the diffusion of the virus through the system. The rules to be acted upon in the case before us are those which teach us the right method of treatment in all cases in which a poison has gained admittance to the circulation. Rule first reads thus:—Prevent the diffusion of the poison through mechanical and other means. All surgeons agree in recommending immediate *excision*, *i.e.* the cutting out of the bitten part, as the safest procedure. To this rule there can be no difficulty or hesitation in assenting, provided there are forthcoming the surgeon and his anæsthetics. By the use of the latter all pain is avoided, and the treatment thus indicated, apart from the question of pain, is that considered the most effective by all authorities. Sir Thomas Watson has a very striking and forcible passage regarding the treatment of the bite of a rabid dog:—"For my own part," says Sir Thomas, "if I had received a bite from a decidedly rabid animal upon my arm or leg, and the bite was such that the whole wound could not be cut out or thoroughly cauterised, my reason would teach me to desire, and I hope I should have fortitude enough to endure, amputation of the limb above the place of the injury."

But suppose medical aid is not forthcoming, what is then to be done by the bystander? The answer is, tie a bandage tightly *above* the wound, for the purpose of arresting the venous circulation, which is, of course, tending to diffuse the poison through the circulation. The poison should then be either destroyed by cauterisation of the wound, or be removed therefrom by suction. Remembering, however, the possible risk of infection through the mucous membrane, the cupping-glass should be preferred as a means of suction. Next, try to wash away, as soon after the infliction of the wound as possible, the poisonous material. Probably the best method of attaining the latter result is that of placing the wounded part under a strong douche or stream of cold or tepid water, and of allowing the water to play with some degree of force on the wounded surface for at least an hour or longer. Thereafter, according to Mr. Youatt's belief, the safety of the sufferer would be secured by having the wounds well cauterised with nitrate of silver (lunar caustic), a substance which, in his own hands, proved eminently successful in the treatment of dog-bites. There could be no objection in the treatment of dog-bite to using a red-hot coal or iron for the purpose of cauterising the wound and destroying the poison. The actual cautery, it may be added, is by no means so painful a procedure as is commonly supposed. The common-sense rules of first and speedily adopting measures calculated to eliminate the poison from the seat of the wound, of arresting its diffusion through the blood-vessels, and thereafter of securing the further immunity of the wounded part by destroying as much of the surrounding tissues as possible should be borne clearly in mind. Curare, the famous arrow-poison, has been employed with success in one case, and high authorities agree in recommending the use of the Turkish bath by way of assisting in the elimination of the poison. But the chief matter which concerns the public at large is that of the means to be used on the spot, the after-treatment being a matter for the especial consideration of the physician.

The conclusions regarding hydrophobia to which these remarks lead, may be summed up in the statements, firstly that it is an affection respecting which much popular misconception exists, and that in consequence a large amount of unnecessary fear and alarm prevail regarding its occurrence; secondly, that hydrophobia is in ordinary cases a curable affection, provided prompt measures are used for its cure; thirdly, that the phenomena of the disease point to its clearly specific nature, and to its being derived in man exclusively from the diseased secretions of rabid dogs and of allied animals; and, lastly, that the best means for ensuring the public safety consist in the widespread knowledge of the nature of the disease and of the measures to be adopted for the prevention and cure of the disorder.

A highly important piece of final advice is that which enforces the wisdom of seeing that a dog, suspected of being rabid, and which has bitten a person, *should not be destroyed*, but should be tied up and carefully watched. If the dog is in good health and has simply bitten the person through anger, the preservation of the animal and its subsequent health will show that the case was not one of rabies, and will save the bitten person many continuous pangs of dread and fear. If, on the contrary, the dog does prove to be rabid, its seclusion will most clearly demonstrate the fact, and it can then be mercifully destroyed, whilst the patient can be attended to, and remedial measures and precautions duly observed.

"Knowledge is power" in truth, in the presence of the sudden danger which a rabid dog or a serpent's tooth, or indeed any other untoward accident, may bring. The knowledge which points the way of safety can in no case be regarded as exaggerating an evil, even although such knowledge deals with details which, to non-professional readers, may appear unpleasant, and which usually fall to be considered by the physician and surgeon alone. Whilst the diffusion of technical information as a means of averting disease and death may be regarded as exemplifying "saving knowledge" of the most valuable kind.

"How to Obtain Light from Coal Gas," is the title of a small *brochure* by Mr. A. Clarke, 30, Watling-street, London. It may be profitably perused by all consumers of gas, indicating as it does briefly but clearly, the means by which the highest illuminating power may be produced with the least expenditure of gas. The author's theory of the proper method of burning coal gas as an illuminant is summed up in the following observation: "Reduce it to 'a moderately low pressure' before it reaches the point of ignition, where it should be *heated* before being consumed."—[Advt.]

# Personal Health

"Be timely wise;
With health all taste of pleasure flies."—*Gay.*

## REMARKS ON THE VEGETARIAN CONTROVERSY.

By E. M. Swanwick, M.R.C.S.E.

In these days, when everybody is "enquiring within" upon everything, and matters touching on health are much to the fore, it would appear not inopportune to offer a few remarks on the subject of vegetarianism; and to discuss the *pros* and *cons* for the general adoption of a vegetarian diet, as recommended by an increasing number of the inhabitants of this country.

In a single short article it would be impossible to dive deeply into the sea of controversy surging around us; yet the leading features of the surface may be a little more than enumerated.

The primary point of the vegetarian doctrine is, that in the comparative study of the anatomy of man and of different animals we find man allied with the fruit-eating animals by the shape of the teeth, which—as in the apes—have rounded cusps on the grinders; that we have no sharp, saw-like teeth, as in the carnivora. By argument from the teeth alone we should say, then, that flesh was not the food best adapted for us to employ as our sole diet. This view is confirmed by experiments in physiology.

Granting that an average man in this country excretes 4,000 grains of carbon daily, and 300 grains of nitrogen, and that he assimilates sufficient meat to supply all the carbon excreted, he would at the same time assimilate considerably more nitrogen than his system required, under ordinary circumstances, and in so doing would throw injuriously hard work on his nitrogen-excreting apparatus—the kidneys. There are mixtures of vegetable foods which would give the exact proportions of carbon and nitrogen required for the support of the system, but the energy required to assimilate the protoplasm of vegetables to that of man is considerably greater than that required to assimilate the protoplasm of animals. This is indicated by the great length of intestine furnished to purely vegetable feeders. In the comparative ease of digestion of animal and vegetable albumen, in the form of foods, an interesting experiment may be tried. Take half-a-pound of lean meat, boil it so as to have as little loss as possible, and eat it for dinner with a little white bread to form mixed food. Next day take six and a-half ounces of beans, and boil them; next day seven ounces of peas. These require no accompaniment of bread. Each of the above represents two ounces of albumen. The after sensations will tolerably well express the quality of the digestion and assimilation. As we can more rapidly convert the potential energy (energy of chemical separation) of meat into our own kinetic energy (or energy of chemical combination), we say that meat is a more stimulating diet than vegetables. If a man is not doing sufficient work to expend the amount of energy necessary for the maintenance of health, he would probably be stronger and in better condition on a vegetarian diet. If, however, he requires all his physical energies for his occupation, it is an economy to substitute the more easily assimilable meat for part of the nitrogenous vegetable diet, if he is able to digest it more easily. The nitrogenous vegetables are with most very hard of digestion, and largely pass through the alimentary canal undigested.

In comparison with the apes, our salivary glands are not so fully developed, which points to a less proportion of vegetable food being adapted to our wants. Yet even the apes eat some animal food when they can catch small birds and insects.

Again, the stomach of man is not shaped like the true herbivorous stomach, nor is it of quite the texture of the carnivorous stomach. In the apes "the stomach is less elongated transversely and less generally constricted in the middle than in man; but the cardiac cæcum is most developed in the former, and especially in the lowest tribes." (Prof. R. E. Grant, "Comparative Anatomy.") The herbivorous animal which possesses a stomach most nearly approaching in shape to that of man is probably the horse. Here, however, the end on the left side of the gullet (the cardiac cæcum) is very much larger in proportion than the human, as in man it is larger than in the cat-tribe of carnivora. In the ruminating herbivora the stomach is compound, and the food takes a double journey from the mouth, thus practically lengthening the already enormously long alimentary canal. Again, in purely vegetable feeders we find an extremely capacious, convoluted colon, or large intestine, continued past the juncture of the small with the large, in a more or less voluminous cæcum, varying according to the proportion of herbaceous material which the animal requires to ingest. Thus in the horse the large bowel is about twenty-three feet long—say three times the length of the animal without its legs; whereas in man his five and a-half or six feet of large intestine is not more than twice as long as his body and head, and has a cæcum of the diminutive length of two and a-half inches. If, then, we are to judge from the comparative anatomy of the digestive organs, we should have to say that man is as distinctly non-herbivorous as he is non-carnivorous, that he tends more to the carnivora side of the scale than the apes do, and that his digestive system seems to be well adapted to an omnivorous diet. His jaws have not the massive muscles which carnivora and apes employ in the mastication of their food, and his food is probably not intended to be so hard. He is a cooking animal by nature, and his grain need not be eaten raw, nor is he required to crack bones. He alone, of all animals, knows how to light a fire. He puts on warm clothes, and eats meat, in cold climate; he indulges sparingly in meat, as a rule, and clothes lightly, or not at all, in warm climates.

Even did the structure of man's alimentary canal not indicate a mixed diet, we could not say from structure alone that any particular kind of food was pointed to by nature. For we find other animals very widely distributed which employ a diet differing with the various climates they inhabit. Thus the polar bear is exclusively carnivorous, the European omnivorous, and the tropical lives chiefly on roots, fruits, honey, insects, with an occasional flesh meal when it can obtain it. Yet the structure of the teeth and the other parts of the alimentary system are alike in all, and these indicate omnivorous habits. On careful examination we see, then, that the anatomical argument of the vegetarians falls to the ground. What can be said of the argument from the chemical analysis of food-stuffs! We have seen that all foods are not equally digestible, nor are they equally assimilable. Chemical analysis of food-stuffs is apt to lead the unwary very much astray. From the quantities of carbon and nitrogen given above as secreted daily by an average man, by chemical analysis we

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

might conclude that a little over 4,000 grains of charcoal a day would satisfy the carbon, and 857 grains of nitrate of ammonia would supply the nitrogen required. I have so often seen the argument from chemical analysis held up as a proof of nutritive value, especially Liebig's analyses, that I could not withhold an extreme instance. Also in a book on vegetarianism occur the words, "We find nitrogen supplied in nearly all kinds of vegetation; and, in case of accidental scarcity in the vegetable kingdom, in the atmosphere which surrounds us," totally ignoring the fact of how little of the nitrogenous material of vegetables is assimilated, and that none of the nitrogen contained in the air, as far as we know, takes any part in our nourishment. Again, gelatin would seem by analysis to be a good nitrogenous food. Dogs will *starve* on pure gelatin. Add a teaspoonful of good meat gravy to each meal of gelatin, and they will be well nourished.

As a general rule, the meat-eater lives more rapidly than the vegetarian, is much more likely to over-feed and give his excretory apparatus too much to do, and so far is more liable to disease. This is a matter he should take into consideration, for there is no doubt that most of us eat too much meat for continuance of health, especially so if the animal has not been carefully fed and nurtured, and properly killed, with sufficient loss of blood. It is here probably, and in insufficient or improper cooking and keeping, that danger from ptomaines* arises. These are probably most dangerous in badly killed and cooked meats on the second, third, and fourth days.

To conclude: Man is naturally a *tropical*, fruit, and root-eating animal, possibly also grain-eating; but his organs are arranged for living on any part of the earth's surface, keeping up his animal heat on animal fats in the north, supplying material for perspiration by consuming vegetable oils in the warm climates. Nature does not provide vegetables in large quantities in arctic climates, but supplies blubber. In tropical countries fruits abound. The whole question, then, is one of economy of energy, for each individual to solve for himself by experience.

## WATER AND TEA *V.* ALCOHOL.

A singular match recently took place in the harvest field as to whether a man could work better on water or alcohol. The contest, which was under the auspices of the Church of England Temperance Society, resulted in favour of the man who took beer. Thus proving, if any proof were needed, that alcohol is a true food, as was affirmed by no less an authority than the late Dr. Druitt, and established beyond a doubt by Dr. Parkes in his experiments on a young healthy soldier—small quantities of alcohol were found to increase the appetite and rouse the action of the heart and capillary vessels, accelerating the circulation; but in large quantities, as when narcotism began, the symptoms were distressing. Another point in favour of a moderate allowance of alcohol—especially when one is suffering from *ennui*—is, that it undoubtedly "gladdeneth the heart of man" as is affirmed on the highest authority. One, therefore, feels almost tempted to say with Shakespeare, "good wine is a good familiar creature, if it be well used; exclaim no more against it." It appears that the well-known pedestrian, Mr. E. Payn Weston, is about to undertake a walking tour through England and Wales, with a view, he asserts, to demonstrate the superiority of tea over beer and alcoholic drinks in general during periods of prolonged muscular exertion. In face of such crushing evidence to the contrary, nothing Mr. Weston can say or do will in the slightest degree tend to shake one's faith in physiological facts — that malt liquor, not only from the fact of the alcohol it contains—from 5 to 15 per cent.—but also from the large quantity of malt extract found in it, ranks consequently as a "flesh former," hence it is frequently prescribed (as was recently pointed out in our columns by Dr. Philip Foster) in convalescence from wasting disease, extreme thinness, feeble digestion, or where there is difficulty in maintaining the animal heat. Tea, as was pointed out by the late Dr. Edward Smith, F.R.S., is hurtful in the absence of food, after a long fast (as at breakfast), to the poor and ill-fed, the spare, and the young. *It is not adapted to sustain exertion*, to prison dietaries, to low temperatures, or to hot climates, when the appetite is defective and the skin active, or to those who perspire too freely, neither should it be taken with our principal meal. It is useful to the corpulent, the over-fed, after a full meal at the end of the day, when the food has accumulated in the system, when digestion and other vital changes proceed slowly; for the sedentary, for those who do not perspire freely, and for those who eat much starchy food.

Mr. Weston may profit by following the advice contained in 1 Timothy, v. 23: "Drink no longer water, but use a little wine for thy stomach's sake."

* Cadaveric alkaloids; alkaloids which form in a dead animal body.

Freckles.—Those who are troubled with freckles should know that keeping the skin moist with a lotion of hyposulphite of soda, of the strength of half a drachm to the ounce of water, is highly useful in removing these disfigurations. Another lotion, for outward use only, (to be carefully used from its poisonous nature) is composed of corrosive sublimate, three grains; sal ammoniac, two drachms; tincture of benzoin, two drachms; and rose-water to make up eight ounces.

Much has been said and written of late years on the importance of having sanitary inspectors of schools, and every sanitarian recognises it. It only need be added in this place that the inspection should begin with the site; and the inspector should possess such qualifications, and be backed by such authority, as would secure the best practical conditions of site, construction, and fittings; and he should be so constant in the exercise of his office as to be able to recognise and prohibit at the outset any and all conditions in conflict with the health of the teachers or pupils. But all that has been or can be said in favour of such service for public schools is of equal force in relation to other public institutions, and to many private ones—if these may be made to include all open to public patronage—*all* educational institutions (private as well as public), churches, assembly halls, court-rooms, jails, hospitals, asylums, charity institutions, hotels, lodging-houses, and tenement houses.

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

# The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

## OUR MEDICAL NOTEBOOK.

EASY HINTS FOR THE TREATMENT OF COMMON COMPLAINTS.

**The Treatment of Stye.**—Recent medical experience in the treatment of that familiar affection the common stye, affords us information worth remembrance. The plan of treatment recommended is to dispense with hot fomentations, &c., and to apply locally tincture of iodine to the lids, care being taken to keep them apart until dry. A few applications in the twenty-four hours is often sufficient to arrest the development of the stye.

In the treatment of **Persistent Cold in the Head, or Nasal Catarrh,** when there is much discharge from the nasal passages, we are advised to use the spray-producer with the following solution:—℞ Carbolic acid, one grain; glycerine two drachms; water, two ounces. After the passages are clean, a small quantity of Vaseline is melted in the bowl of the spray-producer, and two to five drops of the pinus canadensis mixture added. The mixture consists of:—℞ Pinus canadensis, fifteen grains; glycerine, half an ounce; carbolic acid, half a grain; water, an ounce and a-half. This is to be applied by the spray to every part.

**Castor Oil and Glycerine as a Purgative.**—The value of castor oil as a family medicine is undoubted. Referring to its use, Dr. Soper says:—"After many months' experience, I now feel justified in bringing to your notice the great advantages of a combination of the above two drugs in equal proportions to act as a purgative. Glycerine has great therapeutic value, especially in its solvent properties, and this combination renders it especially valuable. In regard to castor oil, I think a great mistake has been made in the largeness of dose administered, and in this mixture only half-a-teaspoonful is required combined with an equal bulk of glycerine. In all cases of chronic constipation, piles, &c., it has proved most useful. I have also given half-teaspoonful doses in the early stages of bronchitis, which seem to promote exudation from the tubes, and is certainly expectorant. My great difficulty hitherto has been the obstinacy with which the mixture becomes a mixture, as it can only be made by placing the bottle in hot water and violently agitating."

**Parsley as a Medicine.**—Dr. Stanislas Martin, after observing that the use of mineral waters interrupted the secretion of milk, states that, as an external application, parsley-leaves act most efficaciously in dispersing it, and that they were used for this purpose by the Roman matrons of old. The breasts should be covered with freshly plucked leaves, and these should be renewed several times a day as fast as they begin to fade. The dispersion of the milk soon takes place. Dr. Dujardin-Beaumetz confirms Dr. Martin's statement, and adds that in Asia Minor parsley in the form of large cataplasms is used by the women as an ordinary domestic remedy.

**Remedies for Severe Itching.**—This troublesome affection may be cured by the use of the following (taken from a French journal):—Milk of almonds, 500 grammes; corrosive sublimate, 0·25 grammes; ammonium chloride, 0·25 grammes. Or, glycerine of starch, 60 grammes; bismuth subnitrate, 5 grammes; zinc oxide, 5 grammes. Or, infusion of mallow, 1 litre; cherry-laurel water (filtered), 50 grammes; borax, 10 grammes.

**Milk and Eggs in Mind Troubles.**—Dr. Clouston, in the Annual Report of the Edinburgh Royal Asylum for 1882, draws attention to the good effects produced by the liberal use of milk and eggs in the case of nervous patients. He gives to such patients as many as a dozen eggs, and as much as six or seven pints of milk a day. When this form of treatment is associated with plenty of walking exercise in the open air, a great increase of weight often takes place. "A gain," he says, "of two or three stone is quite common, and usually there is an immense advance along with this in nervous stability, in contentment and in self-control, even if a complete recovery does not take place." "The greater my experience becomes," writes Dr. Clouston, "I tend more to substitute milk for stimulants. I don't undervalue the latter in suitable cases; but in the very acute cases, both of depression and maniacal exaltation, where the disordered working of the brain tends rapidly to exhaust the strength, I rely more and more on milk and eggs made into liquid custards. One such case this year got eight pints of milk and sixteen eggs every day for three months, and under this treatment recovered. I question whether he would have done so under any other. He was almost dead on admission, acutely delirious, absolutely sleepless, and very nearly pulseless. It was a hand-to-hand fight between the acute disease in his brain and his general vitality. If his stomach could not have digested and his body assimilated enough suitable nourishment, or if he could not have been taken out freely into the open air, he must have died. But to-day he is fulfilling the duties of his position as well as he ever did in his life. All acute mental diseases, like most nervous diseases, tend to thinness of body, and therefore all foods, and all medicines, and all treatments that fatten, are good. To my assistants, and nurses, and patients, I preach the gospel of fatness as the great antidote to the exhausting tendencies of the disease we have to treat, and it would be well if all people of nervous constitution would obey this gospel."

**The Medical Uses of Figs.**—Professor Bouchut speaks of some experiments he has made, tending to show that the milky juice of the fig-tree possesses a digestive power. He also observed that when some of this preparation was mixed with animal tissue, it preserved it from decay for a long time. This fact, in connection with Professor Billroth's experience in a case of cancer, which was so excessively foul smelling that all his deodorisers failed, but which on applying a poultice made of dried figs cooked in milk was entirely freed from odour, gives an importance to this homely remedy.

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The Diamond.—The diamond is pure carbon, or charcoal crystallised. It is among the rarest of all known substances, and carbon is among the most abundant. We can have a roomful of pure carbon for sixpence, but a bit of pure crystallised carbon the size of half a walnut is worth many thousand pounds. A diamond requires great heat to burn it, but when it does burn, it consumes utterly. Its whole substance changes into that kind of gas which is pumped into soda-water, and is produced naturally in champagne.

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Health Lectures to Ladies.—In connection with the Liverpool Science and Art Classes there will meet, during the winter session, special classes for ladies for the study of Hygiene and Animal Physiology. These classes will be conducted by Miss Helen Fryer, who, on Monday last, in the Lecture Hall of the Philharmonic-buildings, 1, Falkner-street, delivered a lecture introductory to both courses, and on Monday next the first lecture of each course will be given.—[Advt.]

# Healthy Houses

"A happy home must be a healthy home."—*Anon.*

## HEALTH AND LOCALITY.

Mr. W. Eassie, C.E., in a recent address delivered before the Sanitary Institute of Great Britain, said:—It is singular, taking England as an example, that the distribution of certain diseases largely depends upon the absence or otherwise of valleys and rivers, along which the winds can sweep without interruption; in other words, upon the physical conformation of our island as it was left at the end of the last geological epoch, when it became fit for the residence of man. I will mention one or two instances, and the lessons which they teach would amount to this, that before making choice of a locality for people subject to certain ailments, it is wise to take its geological structure into consideration. Mr. Alfred Haviland says, after years of study on this matter, that "those coastal counties most exposed to the prevailing winds are most free from obstructions to their full operations, have the least mortality"—due to heart disease, "whereas, those coastal counties, such as those along the south coast, which have barrier-like rocks and other characters which tend to interfere with the full sweep of the sea winds, are those which have a high mortality." Where the precipitous and wall-like rocks are intersected by every variety of sea inlet opening into wide valleys, through which the winds can scour along, there is a lower mortality. He also remarks that, "coincident with the lowest exposure to the sea, as in the Midland Counties, is the highest mortality of heart disease in those counties, and the lowest amount of mortality is coincident with the greatest amount of exposure. The counties which lie immediately between these extremes have also an intermediate amount of death-rate." His conclusions have been worked out with the extremest care, accompanied by maps. As an example, it may be instanced, that the East Yorkshire group of counties, which is bounded by a precipitous coast of oolite and chalk cliffs, say from Whitby to Bridlington Bay, and has no inlets, with an inland-directed water-shed, has a high mortality.

The low coast of sea-board, between Bridlington and the Isle of Sheppey, differently situated in respect of offering no check to the winds, has a very low mortality. These conclusions are well worthy of attention and of serious moment, seeing that the mortality from heart disease and dropsy amounts to more than one-seventeenth part of the whole mortality from all causes. London, as a division, has a low mortality, and coincident with this it is traversed by the great sea inlet, the Thames, with a twice a-day average rise of the tide between 16 and 20 feet.

About fifteen years ago Dr. Buchanan examined three of the southern counties of England with regard to the distribution of phthisis or consumption, and, without going into the details of his report, I will give his conclusions, which are as follows:—

Within the counties of Surrey, Kent, and Sussex there is, broadly speaking, less phthisis among populations living on porous soils than among populations living on impervious soils.

Within the same counties there is less phthisis among populations living on high-lying pervious soils than among populations living on low-lying pervious soils.

Within the same counties there is less phthisis among populations living on sloping impervious soils than among populations living on flat impervious soils.

The whole of the foregoing conclusions combined into one—which may now be affirmed generally, and not only of particular districts—that wetness of soil is a cause of phthisis to the population living upon it.

Mr. Haviland, a few years ago, writing upon phthisis in females, says that "the warm, fertile, ferruginous, red sandstone tracts of country are remarkable for forming the sites of the most extensive series of low mortality groups throughout England. The high elevated ridges of non-ferruginous and unfertile carboniferous limestone and coal, and the elevated, hard, unfertile, non-ferruginous Silurian forms the sites of the most extensive series of high mortality groups."

Sudden Changes in the Colour of the Hair and Skin.—At a recent meeting of the Academy of Medicine of Dublin, Dr. W. J. Smyly read a paper on sudden change in the colour of the hair of an infant. The child was perfectly healthy, to all appearance, until he was four months old. He was then attacked with acute inflammation, followed by suppuration in the left temporal bone, with high fever and profuse perspiration, and paralysis of the left side of the face. One morning (Nov. 1 last), the hair on the right side of the head was discovered to have undergone a remarkable change from its original mouse-coloured hue to a reddish-yellow. The right eyebrow was similarly affected, and the skin of these parts—as well as that of the right hand—was bright yellow. The pillow also was saturated with a reddish-yellow perspiration. The suggestion offered as to the possible cause of this remarkable change in the colour of the hair was that the perspiration, which was of a peculiar colour, and probably of abnormal chemical constitution, not only destroyed the original pigment, but also dyed the hair a reddish-yellow colour. Dr. Banks referred to a case which had come under his notice—that of a young woman. Half of the lashes of one of her eyes became snow-white, which she attributed to the annoyance suffered from the persistent gaze of a "wall-eyed" admirer who had white lashes on the defective eye. Dr. Walter Smith related the case of a boy in whom the skin of the lobes of both ears, and that of the back of the neck, was of a sulphur-yellow, the downy hair being of a bright yellow. The hair of the head was brown. The yellow colouring could be readily removed by a moistened cloth, but no washing could decolourise the skin; nor did ether or chloroform produce any effect. He exhibited specimens of the hair. He also referred to a case of red discoloration recorded by Wilson. After relating the case described by Darwin, in which the hair of a criminal, brought out for execution, turned white in the presence of the spectators, he said he could not agree with Dr. Smyly in ascribing bleaching properties to the perspiration, but did not give any explanation in lieu of it.

Pownceby's Pure Wines and Brandies, as analysed, and especially selected to suit medicinal purposes, may be obtained in small quantities at wholesale prices. Free delivery within fifty miles. Circular and price current by post from Pownceby & Co., Wine and Brandy Importers, 183, Oxford-street, London, W.—[Advt.]

Hampstead.—High and healthy position, near the Heath. Stanfield House School for sons of gentlemen. Home comforts; and the health of pupils carefully studied. Individual teaching. Principal: Mr. W. R. Marshall (several years' experience), assisted by eminent masters. Prospectus on application.—[Advt.]

# Recreation and Health

"Health is the vital principle of bliss,
And Exercise of health."—*Thomson.*

## PHYSICAL EXERCISE.

### RIDING, BICYCLING, TRICYCLING, AND LAWN-TENNIS.

By C. W. Cathcart, M.B., F.R.C.S.

(*Lecture on Anatomy in the Edinburgh Medical School.*)

SECOND PAPER.

Riding on horse-back, for those who are able to afford it, is in many ways a most valuable exercise. It is especially suited for those who are unable to walk far or fast. The effort to maintain the seat and preserve the balance of the body affords a useful and pleasant exercise, while the rapid change of scene and the effort necessary to guide the horse, afford a mental diversion which has already been alluded to as very important. The quick passage through the air is most exhilarating, while the amount of necessary jolting is said to be of much benefit to a sluggish liver.

In bicycling and tricycling we have forms of exercise which are similar to that of riding on horseback, although requiring a greater effort of the legs. The machines now used are light and well-made, and almost incredibly long distances may be covered on them in very short spaces of time. Of the two, bicycles are the faster and easier, especially for long distances, but there is a certain element of danger connected with them, and a greater amount of activity is required in mounting and dismounting, which makes them less available for middle-aged or delicate persons than for the young and active. On the other hand, the art of riding a tricycle is easily learned, and the machines are now so beautifully and carefully made in every detail of their mechanism that almost any one may take to them with pleasure and benefit. Many for whom horse exercise would be suited but who are unable to afford the luxury of a horse, may be able to buy a tricycle, and get as much benefit from it as from the living and more expensive steed. If any one wishes to ride a bicycle, he must be active, and if he is to avoid the risks of a fall must always ride with care and be especially circumspect when coming down hill. There is no evidence to show that ruptures or other injuries are apt to be caused by bicycle or tricycle riding more than by any other form of exercise; the rule applies here, as it does elsewhere, to do things in moderation and avoid undue violence and over-fatigue. Under our next head, *i.e.* "games involving running," most of the commoner games of children may be included. It is unnecessary to enumerate them, as our present purpose is merely to point out that they chiefly involve the use of the lower limbs. They are, however, admirably suited to children and girls, since they cannot be said to require any violence, and since they are entered into with great glee and are usually accompanied with abundance of shouting and laughter, thus increasing the action of the lungs in addition to what is required by the muscular exertion itself. If any word of caution has to be given it is to prevent cold being taken after these games. They are often played in the evening, and there is a great temptation for the players to sit down in the chill and damp air after having been overheated, which may prove most dangerous. Care should, therefore, be taken to prevent the risk of a chill after these games, and if possible the clothes should be changed to avoid the necessity of sitting in garments damp with perspiration.

As regards golf, that prince of games for men and boys, we can only speak of it with unqualified praise. No game that we know of can be carried on so late in life, and with such good results, and none brings with it a greater keenness of interest, enticing us on as it does from point to point over the fresh and breezy links, and giving us more and more delight each time we play. The exertion of swinging the club brings out the muscles of the whole body, while the attention and care required for each stroke, and the zest of a well contested match, give us the very best form of exercise and recreation, for those whose life during the greater part of the year is necessarily sedentary. Few are able to realise the intense interest with which golf players follow their game, until they have tried it for themselves, and then they find that what seems a very meaningless striking of a ball with a stick along the grass, is one of the most captivating and enjoyable games they could have imagined. Golf may be taken up at any age, but it is always better to begin young, and no youngster who can possibly get an opportunity should ever miss the chance of learning, even though he should not play regularly for years after. Wherever the land along the shore grows that short thick turf which is necessary for the game, and the ground is promising for a "links," it should be set aside as a national property, and be preserved with jealous care.

To conclude this brief sketch of the milder forms of exercise, we may say a word or two on lawn-tennis, and contrast it in passing with that almost extinct game of croquet. The two may be taken together because, although differing considerably as a means of exercise, they are very similar in the place they hold (or held in the case of croquet) in the social scale, if we may so express it. Both are available on level lawns all over the world, can be equally played by ladies as well as gentlemen, and are or have been made the opportunity for large social gatherings, under the name of croquet parties a few years ago, and lawn-tennis parties now-a-days. In lawn-tennis there are facilities for active exertion involving the legs, trunk, and right arm, and a constant and varying interest. In croquet, on the other hand, the exertion can never be said to be active, and is generally quite the reverse, the stooping position required being also bad for the chest, while the interest is for the most part intermittent, and is often anything but pleasurable. We do not wish to heap too much discredit on a game which is now nearly extinct, but in our experience and in that of many friends with whom we have compared notes, there is no game which is so provoking as croquet, none in which the effort to preserve the Christian graces is so much required, or so often without effect. What may be said for it is, that it affords a widely-available out-door amusement for both ladies and gentlemen, especially for those who are not strong enough for lawn-tennis, and for these reasons it may revive again to a certain extent, but never, we trust, to its former position as almost the only available lawn amusement for ladies and gentlemen together. One aspect of croquet we must not omit before we leave it, and that is the excellence of its matrimonial facilities. It not only brings ladies and gentlemen together, but by its inertness it gives them ample opportunities for conversation, while it affords, moreover, a most admirable test of sweetness and good temper.

Lawn-tennis is so well known and appreciated that it is

Figure-Beautifying Corsets.—Every lady should send for illustrated circular of the "Ideal," patented. The only corset regulated to impart any degree of fulness and beauty to thin busts. Prices: 8s. 3d., 10s. 9d., &c.—H. Evans & Bale, 52, Aldermanbury, London.—[Advt.]

more in the way of caution than of praise that anything requires to be said here. Unfortunately in many cases it is only too popular, and young people are apt to bring it into discredit by injuring themselves through playing it to excess. When we hear of the "lawn-tennis elbow," or "lawn-tennis knee," we must not suppose that there is anything specifically inherent in the game to produce these results. What it means is, that by the unequal and excessive use of any joint or muscle we may set up mischief in it, and when lawn-tennis is played to excess the joints and muscles most concerned are apt to suffer. Two or three hours per day at the outside ought to be enough to satisfy most people, but five, six, or seven hours, especially for ladies, is certainly too much. Since the right arm only is generally employed, efforts should be made to exercise the left arm and left side of the body to counteract this one-sided tendency, and the greatest care should be taken to avoid playing if any of the joints are strained, as the rapid turns and quick movements are apt to cause sprains and wrenches if they should have any tendency to give way. Those who have not been accustomed to active exercise should begin gradually. If they do, and if they play the game within reasonable limits, and supplement it with walking or riding, or some other form of exercise, they will find that lawn-tennis is one of the most valuable as well as the most fashionable of our modern forms of physical exercise.

*(To be continued.)*

Children's Minds.—In October, 1869, the Pedagogical Society of Berlin inquired by circular how many of the children who entered the primary classes had seen certain common animals, insects, and plants, public buildings, museums, parks, suburban pleasure-resorts, &c. Other questions related to the home, farm, natural history, God, Christ, prayer, and many such subjects. Profiting by this experiment, Mr. G. Stanley Hall, last September, undertook to ascertain the contents of children's minds on entering the Boston primary schools. Much pains was taken to collate such questions as would yield the best results, and to utilise the most skilful kindergarten teachers in putting the questions. Even with all these aids and cautions the results were often very amusing. Two tables are given by Mr. Hall, setting forth the words, and the percentage of children ignorant of them. The high rate of ignorance is absolutely astonishing. About ninety per cent. did not know where their ribs were situated, and seventy-five per cent. could not describe an island. Furthermore, those who knew certain facts—for instance, that cheese comes from the cow—apprehended them in the loosest manner, thinking, perhaps, that the cheese is squeezed from the cow as the juice from a lemon. The same ignorance or indefiniteness of knowledge marked the opinions of the majority of the children concerning natural phenomena, natural history, and physical experiments of the simplest kind. The author comes to the following conclusions:—(1) Children know next to nothing valuable at the outset of their school life; (2) children can best be prepared for school by familiarising them with objects; (3) teachers should carefully explore children's minds; (4) the concepts that are most common in the children of a given locality are the earliest to be acquired, while the rarer ones are later.

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

# Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, littl care."—*Sir Philip Sidney.*

The Drainage of a West-end Mansion.—In the immediate neighbourhood of Pall-Mall we recently visited the basement of a mansion belonging to a prominent member of the House of Peers, who had reason to suspect that the drainage was not in a satisfactory condition. To judge from external appearance, the house was in good order, and resembled in every respect hundreds of other similar residences. On removing the floor, however, it soon became apparent that the whole basement was honeycombed with elongated cesspools. A number of large brick drains ran in all directions, divided here and there, as a protection against sewer gas, by dip stone traps. These consisted of square holes about a yard deep and nearly as wide. In the centre a flagstone was inserted that reached down nearly to the bottom, thus forming a sort of syphon-trap; but, considering that about a cubic yard of sewage had to accumulate in this receptacle before any could flow out of the trap, the water had time to deposit the heavier particles held in suspension, and the traps gradually became blocked with hard, black sewage matter. The flow thus checked, the numerous brick drains, some two feet in diameter, also became choked up. Some of them were opened in our presence. They were full up to the top with black soil, that threw up poisonous gases on being touched with a spade. Several cartloads of this foul accumulation had to be removed, and all this from the basement of one single house and its adjoining stables. The largest drain went direct into the sewer without trap or any sort of interception, and brought back the sewer gas to the servants' hall by means of an aperture under the floor, where a sink-pipe was improperly fitted into the drains. A branch drain under the kitchen floor was leaking. In an ill-ventilated scullery, next to the kitchen, there was a sort of cesspool under the sink, two yards square and one deep, full of greasy, thick, and putrid deposit. The fall of the drain passing under the kitchen sink inclined in the wrong direction, so that the entire drains had to be filled before any liquid could get away into the sewer. In the larder there was another dip stone trap, full of solid deposit, that gave off dangerous effluvium through two ineffectual bell-traps covering the mouths of openings in the floor. Altogether the greatest ingenuity seems to have been displayed in laying down a needlessly-complicated network of drains, so contrived that the solids could easily accumulate in them, and that sewer gas could have every opportunity of pervading the whole house in a most insidious and complete manner. The owner of this mansion may be congratulated on having discovered the great danger to which all its inhabitants were exposed, and we only wish that these facts might be more generally known, for there are hundreds of other houses in an equally bad condition.—*Lancet.*

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Disinfection of Rags.—An agitation, based no doubt on the recent issue of the Government orders regulating the importation of rags from Egypt, has been set on foot for extending the provisions of such orders, or something like them, to rags of all kinds coming from foreign countries. Thus the Hull Sanitary Committee confirmed, at their last meeting, a report signed by the chairman, the

town clerk, the medical officer of health, and the borough engineer, which stated that, although few rags from Egypt find their way to Hull, large numbers of bales from other other countries, *e.g.*, Denmark, Germany, Belgium, Norway, and France, are received there, and that the authorities have no power to prevent this importation. The committee recommended that ample powers ahould be conferred on local authorities to prevent possible introduction of disease by cargoes capable of conveying infection. Sir Charles Dilke, replying to Sir Stafford Northcote on the 15th said that the question of restricting the importation of rags was under consideration; and, meanwhile, the Local Government Board have issued a memorandum by their medical officer, Dr. Buchanan, expository of the recent orders as to Egyptian rags, and Dr. Buchanan points out the importance of some place being ready for the first deposit of rags which may have to be landed. The health officer will have to be guided by his own inquiries in the time of collection and characters of the rags, whether any bale shall undergo disinfection or be destroyed. As regards disinfection, the following measures are suggested. 1. The bale should be exposed to heat in such a way that every article in it shall attain a temperature of 250° Fahr., and be kept at that temperature for two hours. The arrangement which gives greatest penetration of heat is the use of high pressure steam, more especially if the pressure be from time to time relaxed and reapplied so as to displace air. By this means it is possible to avoid so detailed a spreading out of the rags as would be requisite for efficiency with other processes. 2. The bale may be opened out and the whole of its contents be exposed to disinfection by a liquid agent; and this may either be water sustained for a while at boiling heat, or water containing in every four gallons one pint of the common clear solution of chloride of lime. In such chlorinated water, the rags should soak for some hours.—*British Medical Journal.*

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Breathing-space in Nurseries.—A room 15 ft. square and 9 ft. high affords ample initial cubic space for a nurse and two children; with good and careful management, a nurse, infant, and two other young children have occupied a bedroom of this size without detriment to health. No useless articles of furniture or of drapery were allowed entrance; both a dressing-room and a bath-room were close at hand, care was taken to keep the air of the room pure, no open vessels were allowed to remain, the door, never quite closed, admitted light and air from the passage, the two windows were partly open on the summer nights, and the fire always lighted before bed-time in the winter. Children from seven to nine or ten years of age may have separate bedrooms, and after that age a separate dormitory for each is requisite. A space of 14 ft. or 15 ft. by 8 ft. or 9 ft. wide permits of a bed 4 ft. wide to be placed between the door and the wall, and a fireplace in the opposite wall to be beyond the foot of the bed. No double-bedded room should be less than 15 ft. square, and no bedroom should be without a fireplace. A child until two years old must sleep with the nurse, and requires the same allowance of cubic space.

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In towns epidemics spread with much greater rapidity than they do in the country. Owing to the near proximity of the several inhabitants, the network along which contagion travels is so close that very few children escape when any pestilence is dragging the enclosures in which they live.

# Our Bookshelf

"Reading maketh a full man."—*Bacon.*

## SOME TRUSTWORTHY GUIDES TO HEALTHY LIVING.

*One Thousand Medical Maxims and Surgical Hints, for Infancy, Adult Life, Middle Age, and Old Age.* By N. E. Davies, L.R.C.P. and M.R.C.S. (London: Chatto & Windus). Price 1s.; cloth, 1s. 6d.

Mr. Davies tells us that the idea of his useful little work owed its origin to questions put to the writer by a non-professional friend. The experience of every doctor is the same. People are fond of asking questions of their medical men about themselves, their bodily structure, and, above all, their ailments, real or fancied. We do not suppose for a moment that this practice will ever become extinct; but we think Mr. Davies's book will go very far to supply intelligent persons with a large amount of highly useful information, concerning not only the simple treatment of ailments, but also regarding many interesting facts of their bodily structure and functions.

Mr. Davies has adopted the style familiar to all in the "Enquire Within" series of books. He dispenses his information in small, and, we are bound to add, satisfactory and pleasant doses. Here are a few quotations by way of illustrating our author's style :—

71. Every mother should learn to use the thermometer: it predicts fever and dangerous illnesses as a barometer does a storm. They are sold by chemists at 7s. 6d. each, and are known by the name of "clinical thermometers." *

72. The temperature of the body in health is a little under 98½°, marked on the thermometer with an arrow; when the heat of the body at rest exceeds 100°, or falls below 97°, excepting under very rare conditions, danger may be looked for, and medical advice should be sought without delay.

73. In using the thermometer, the bulb should be placed in the armpit next to the skin, and not touching any article of clothing, for five minutes, and the arm drawn over the chest; then the temperature of the body may be read off, and the mercury brought down again to the arrow by gently tapping the thermometer against the palm of the hand.

74. If the temperature of the body reaches 103°, fever, inflammatory action, or constitutional disturbance is severe; 104° or 105°, very severe; 106°, very dangerous; and 107°, usually fatal; and when it reaches 108°, death may be expected within twenty-four hours. These figures refer to males and females alike.

75. In the great majority of cases of fever or inflammation, the temperature does not ever exceed 106°.

76. In fever, when the temperature returns to its normal 98½°, the "crisis" is past, and convalescence commences.

These are useful hints to mothers, and, indeed to every one else.

Taking another selection at random, we find the following useful information given regarding a variety of interesting matters :—

897. Under ordinary circumstances, from three to four hours may be taken as the average time for the digestion of a meal in the stomach.

898. Food should be well masticated before being swallowed, as its admixture with saliva is necessary to digestion.

899. The indigestion of old people often arises from their want of teeth to properly masticate food.

900. The skin and the lungs throw off nearly 3 lb. of effete matter daily.

901. The kidneys of a healthy man, between 20 and 40 years of age, give out 52½ oz. daily.

902. In injury to, or disease of, either side of the brain, the paralysis is found on the opposite side of the body to the seat of the mischief.

* Mr. Casella, 146, Holborn-bars, and Mr. Dollond, 1, Ludgate-hill, London, sell "clinical thermometers," as described above, for a few shillings. Every family should possess one.

903. "Short-sightedness" depends on too great convexity of the lens of the eye, so that the image of any object is thrown too much in front of the retina—the surface which conveys the rays of light to the brain.

904. "Long-sightedness" is the reverse of the preceding; the rays are thrown beyond the retina.

905. Convex or concave glasses will remedy these several defects.

906. The human brain weighs, on the average, forty-nine ounces in the *male*, and forty-four in the *female*.

907. The "heart" weighs, in the adult male, ten ounces, and in the female nine.

908. The kidneys, in health, weigh four to four and a half ounces.

These extracts really describe the nature of this book better than any words of ours. What we may add, is to the effect that Mr. Davies is a safe guide in all the matters with which he deals; and the book is one which, not only from its character but also from its price, should find a place among the "handy books" of every household.

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*A Physician's Sermon to Young Men.* By William Pratt, M.A., M.D. Fourth Thousand. (Messrs. Baillière, Tindall, & Co.) Price 1s.

That such a book as this was needed, and that it is certain to accomplish much and lasting good, no health-reformer will deny. The quacks who prey upon young men can only be legitimately fought and conquered by the diffusion of a sound knowledge of physiology, and the text of Dr. Pratt's little book is based, we think, on sound science. Whatever tends to diffuse a knowledge of health, to afford mental strength and comfort to thousands, and to prevent false notions of either health or disease, deserves to be widely known. And it is in this light that we cordially commend Dr. Pratt's little *brochure* to young men, and to all interested in the welfare of youth.

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*The Mother's Guide to the Management and Feeding of Infants.* By John M. Keating, M.D. Rewritten and revised by Armand Temple, B.A., M.B. (Cantab.), M.R.C.P. (London: Henry Kimpton, 82, High Holborn.)

The judicious care of infancy naturally presents itself as the foundation of the health of each generation. This fact is tacitly recognised, but not always acted upon; for medical men well know that it is in the treatment of healthy "bairns," and in the physicking of the unhealthy ones, that popular medical superstition most strongly holds its own against the advance of science. Dr. Temple's volume is one of a class which the development of education is rapidly producing in our day. As public intelligence advances, the care of health must necessarily assume a high place in the concerns of educationists; and amongst the topics in which the women of our race will, it is to be hoped, receive a complete education in future, are the care and management of children in health and disease. We have never met with a more complete "manual for the mother," than this book. The following preliminary tables are of high interest, and serve as an example of the practical style in which this book is written:—

How to bring up Babies.—(1.) Keep them warm; let the clothing be warm, but not tight. Give them plenty of fresh air. Open the windows freely at least twice every day, and send the children out whenever the weather is fine. Wash the child all over with warm water and soap daily (if there be any skin eruption, tar soap should be used), wiping it thoroughly dry afterwards.

Nourishment: Under Seven Months.—(2.) The mother's milk is the most natural, and therefore the proper food for infants. Let her, therefore, suckle her child, if she have plenty of milk, and give it nothing else until it is seven months old. If the mother have only a little milk, let the child have it, and give it also cow's milk and water, as directed in (3). Begin to wean the baby when it is from seven to nine months old.

How to Bring up "by Hand."—(3.) If the child must be brought up by hand, it should be fed with warm milk and water out of a bottle. The infant should take at first equal parts of milk and water; but when it is a month old, two parts of milk should be mixed with one of water. Each bottleful should have a small lump of sugar put into it. When good cow's milk cannot be obtained, use the Swiss condensed milk. Begin with a small teaspoonful in half a feeding-bottleful of warm water for a meal; increase the quantity gradually; two teaspoonfuls for a meal is enough for a baby three months old. No sugar should be added. Give the baby no other kind of food whatever. Most of the deaths from hand-feeding are due to the practice of giving gruel, arrowroot, cornflour, and other unsuitable kinds of food, which contain no proper nourishment. While the baby is under a month old do not give it more than half a bottleful of milk-and-water for one meal. The bottle should draw easily. It should be rinsed out with warm water every time it is used. It is a good plan to have two bottles, using them alternately, so that the one not in use may be soaking in soda-water till required, when it is simply necessary to rinse it well with clean cold water. The tube and cork should be kept in clean cold water. If the bottle be not quite clean the milk will turn sour, and the child suffer in consequence.

Importance of Regular Feeding.—(4.) During the first six weeks the child should be put to the breast regularly every two hours during the day. After that age, about every three hours. During the night it does not require to be fed so often. It the child be brought up by hand, it should be fed regularly in the same way.

Food, when over Seven Months.—(5.) When it is seven months old, the child should have an occasional meal of Nestle's milk food, or its milk may be thickened alternately with arrowroot and Nelson's patent gelatine. When nine months old, it should have one or two meals a day of milk thickened with Robb's biscuit, Hard's farinaceous food, Liebig's malted food, or good well-baked bread. This should be given by a bottle, and be made thin enough to pass through a sieve or strainer. The child should still have, in addition, plenty of milk. When nine to twelve months old, the child should be completely weaned. At ten months, it should have a little broth or beef-tea every day. At a year and a half, it may take a little meat every day, cut up fine or pounded; but even then milk should constitute its chief food.

Improper Food.—(6.) Beer, wine, spirits, and all other stimulants; tea, cheese, pastry, and other food such as grown up people take, should never be given to young children. Sleeping-draughts, cordials, and other kinds of medicine, should never be administered without medical advice.

We have glanced carefully through the pages of this work; its instruction is eminently sound; and we have nothing for it but unqualified praise.

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## A BOOK OF HEALTHY HUMOUR.

*Dr. Corpus's Class;* A Series of Lectures on the Human Body from a Comical Point of View. (London: Wyman & Sons.) [Price, 1s.]

This should rank as one of the best, most innocent, and most genuine books of humour which has of late been published. It really sparkles with wit, and should, we imagine, become highly popular with all who are in the habit of giving recitations and readings. The droll gravity of the "lectures" is highly amusing; and there is also a considerable amount of serious information interspersed amongst the wit of the volume. Such an example as the following should recommend the book to those who desire the good medical effect of a hearty laugh:—"In entering the mouth, we first come to the lips. These are the parts of the feature that enter largely into the matter of expression, of which I have already spoken. In pretty girls they are generally compared to cherries or roses. In such subjects they are also very liable to become 'chapped.' The best treatment for this kind of affection is a preventive one—keep the 'chaps' from them. That is better than lip-salve. Besides cherries and roses, there is another plant with which the lips are intimately associated, and that is the mistletoe. What would life be without a kiss

now and then? Some young fellows would almost give one of their ears for it—that is, with the right person. They probably would not consent to the sacrifice for the sake of their grandmother."

# Sanitary Appliances, Etc.

"Sanitas" Preparations.—We have received samples of these preparations, which are so well known as disinfectants, that any further recommendation of them seems quite superfluous. We have already commended "Sanitas" in its various forms in the articles on "Disinfectants," which have appeared in our "Family Circle" pages; and we have also found it necessary to make frequent mention of these valuable disinfectants in our replies to correspondents. We can only repeat here what we have already said of these preparations—namely, that for cleanliness, absence of disagreeable odour (no small boon in the matter of disinfection), effectiveness in destroying smells, infection and their causes, the "Sanitas" fluids are not to be surpassed. A tin of "Sanitas" powder should be kept in every closet, and the pans of all closets should always have a little of the powder sprinkled therein. This practice alone constitutes a medicated "trap" against disease-germs and sewage gas. The "Sanitas" fluid oil emulsions are adapted for use under all possible conditions requiring disinfection, and the handy "Vaporiser," which the Sanitas Company now sell, renders it possible to disinfect a room thoroughly at a small cost. By means of a spirit lamp the fluid is volatilised, and the air and furniture of a room become (as we have proved by experiment) thoroughly impregnated with the pleasant and highly-disinfective odour of the substance. The use of "Sanitas" has really reduced the science of disinfection to a matter of easy everyday practice.

Dr. Nichol's "Food of Health" Biscuits.—We have received a sample of these biscuits, which have been subjected to a careful examination. The result of this has been to show that these biscuits are highly nutritious, bone-forming, and eminently adapted for weakly persons and children, whilst they are equally well suited for adults. Their use tends to obviate digestive disorders, amongst which constipation may be ranked. These biscuits are to had at 23, Oxford-street, London, W. A handy "Penny Vegetarian Cookery Book" is also issued by the same firm.

# Our Letter : Box

**"Conference [maketh] a ready man."—*Bacon.***

*NOTICES TO CORRESPONDENTS.*

*All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to "The Editor of Health," 74-76, Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to "The Publisher," at the same address.*

*Contributors are requested to send stamps for the return of the* MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* Editor *and* Publishers *cannot hold themselves responsible for accidental loss.*

*Correspondents are requested to write on one side of the paper only. The* Editor *disclaims responsibility for the opinions expressed by Correspondents.*

## LETTERS TO THE EDITOR.

### ELECTRICAL QUACKERY.

Dear Sir,—I have read with great pleasure your article on "Electrical Quackery"; and also the useful and clearly expressed papers by Mr. W. Lant Carpenter on "Electrical Appliances." It is not easy to estimate the amount of good they are likely to do in preventing people being imposed upon by the sellers of the (so-called) "magneto-electric" shams. Holding the post of Medical Electrician to a hospital, I often hear of these cases of imposition.

W. E. Steavenson, M.B. (Cantab), M.R.C.P.,
Casualty Physician and Medical Electrician to St. Bartholomew's Hospital.
Sept. 24, 1883.

### RATIONAL DRESS.

Sir,—I observe you have been giving scope to the "Rational Dress" advocates of late; and to criticism of their methods of reform. If you do not deem the topic quite "threshed out," kindly allow me through your columns to ask Lady Harberton, Mrs. King, or any other "dress reformer," to point out to me wherein the "elegance" of their reform is to be found. We have all heard of the Venus de Milo and her Florentine neighbour as the models of the female form. But will any one tell me where a dress reformer is to be seen, the lines of whose body as clothed in the garments of wisdom, approaches to anything like the elegant shape of the human frame? "Dress-reformers" make much of the natural form of the body; and rightly so. But I have never yet seen a "dress reformed" lady who did not look somewhat dowdyish. I pray my fair friends to excuse the plain-speaking of a male creature. I have seen the "reformers" clad in "breeks," sack-like jackets, free flowing robes, *et hoc genus omne*, but never yet have I seen a dress-reformed lady exhibit a tithe of the elegance which a well-made, ordinary "close-fitting" (but *not* constricting) costume gives to the figure. There may be some dress reformers yet to come who will show us the graceful outlines of the form we all admire, as fashion shows those outlines to-day. But I haven't seen them yet. If they exist, then, for the sake of "rational dress," health, and æsthetics, I say, in the language of the poet, "trot them out."—I am, yours, &c., Willing to be Converted.

### HEALTH IN THE HOME.

Sir,—Allow me a small space in one of the columns of your most valuable journal to say a little on the most important subject, Health—the chief object of good health being the wholesome and well arranged sanitary condition of dwelling-houses. There are, however, a variety of systems patented and brought before the public by numerous tradesmen and others, some builders, decorators, plumbers, merchants, &c., but I may say the simplest arrangement is the most effectual.

The following, if properly applied, may be considered a good system :—Cut off the communication of the house drain with the sewer by inserting a trap having a water seal at the nearest point to sewer. Over this trap build an inspection chamber (of glazed bricks) of suitable size for a man to get to the trap and inspect, or clean it out if necessary, and covered with an air-tight cover. Into this chamber pass an air inlet fitted with a non-return valve, or an open pipe above the roof.

The sketch, Fig. 1 shows a Buchan, No. 2, disconnecting drain-trap. A shows the fall of sewage into the trap, thus making it self-cleansing; B, course of sewage, C, the fresh-air passing through the drain. D, an access opening for the sewer side of the trap, also, if considered necessary, to ventilate the sewer. (No. 1

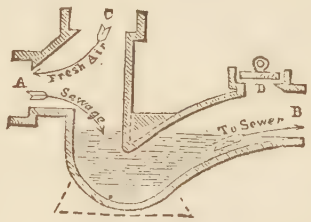

Fig. 1.

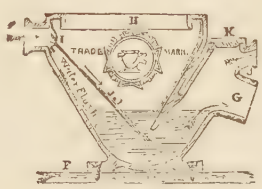

Fig. 3.

Fig. 2.

trap is made without this opening.) The pipes from the trap being of suitable size they should be well laid, the joints being made with good Portland Cement by an experienced man, care being taken that no surplus cement remains in the interior to cause a stoppage.

Should there be any junctions or bends required, these should be channel pipes, and an inspection chamber built over, covered with an air-tight cover giving a good access for passing a rod through the drain in case of stoppage.

The soil-pipe may lead into the drain with a bend junction Y, or otherwise as most suitable.

The soil-pipe should be carried up above the ridge of the roof, and a ventilator fixed thereon.

Fig. 2 shows a No. 1 Buchan's induced current fixed ventilator, for soil-pipe.

Rain-water and wastes should discharge over gulleys, which would disconnect them from the drain, and catch any sediment of sand, &c.

Fig. 3 shows a sketch of a "Carmichael" closet, which is a cheap and effectual and complete wash-down arrangement, there being always sufficient water in the trap to shut off the soil-pipe. F is the service-pipe, the water passing through the jet I, and completely washing out at G; K is an access opening for cleansing, if necessary; K represents a flushing-rim round the interior of the pan.

With this arrangement complete, the sewer being trapped off outside the house, fresh air continually passing through the inspection chamber and up the ventilator, it must be clear that no smells could well reach the inhabitants.—I am, yours truly,

William Hughes.

7, Everleigh-street, Tollington-park, N., London.

## QUERIES AND ANSWERS.

[Correspondents will please note that Queries addressed on Post-cards are consigned to our waste-paper basket. If information is worth having, it is at least worth a letter.]

### GENERAL.

Alaska.—See article on "Sea-sickness" in a recent number of Health.

Entor.—Possibly not; because the conditions were not complied with.

Cantor.—Edinburgh or London.

J. Bingley.—Try the effect of a letter to the firm.

Walls.—No quack can sue for professional services. He can be indicted, if good evidence be forthcoming, for practising medicine without a qualification to do so.

S. S.—The work you name was reviewed in Health, No. 20, page 318. Its title is "Kallos," and it is published by Simpkin & Co.

### SANITARY.

Sylvia—There is no doubt that the system named is a good one. We know it well.

A. J. Blake.—Try the effect of Sanitas oil.

B. Kimpton.—No question of ventilation involved; only one of disinfection.

A. Kitching.—Write for a syllabus to the Secretary, Science and Art Department, South Kensington, London. If not informed, write us again.

R. A. C.—The air we regard as bracing, and the situation of the houses good.

### MEDICAL.

G. T.—1. Clothe warmly, and, if necessary, fortify your system against attack by tonics. If weak in chest, take cod-liver oil. A series of hot salt baths would also do good. 2. Yes: the ear-trouble may be cured. Consult an ear-surgeon. You probably have a perforation of the "drum," and there is always risk of cold and inflammation till you get the drum healed.

E. Smith.—Yours is a by no means uncommon case of dyspepsia. You must have more out-door exercise, and give up the late supper. See to the condition of stomach and bowels. More fresh air and a cold sponge-bath will do you good.

Mongoose.—See our "Notes by the Way," No. 25 Health, for remarks on snake-bite. The poison of different snakes seems to act in different ways. There is no remedy beyond excising the bite, preventing the spread of the poison through the circulation, and giving plenty of stimulants. There is no one antidote which can affect the poison when once introduced, but experiments are proceeding now in the entire subject.

Anti-Quack.—No need to be alarmed; what you mention is a perfectly normal occurrence in healthy life. See that he sleeps on a hard mattress, and avoid fluids late at night. Yes, we should think Dr. Pratt's "Sermon to Young Men," (Baillière, Tindall, & Cox, London) should be read; but be careful not to fancy (or to instil the belief) that any disease is present.

Victor.—See advice to "Anti-Quack," above; take a tea-spoonful of Fellows' "Syrup of the Hypophosphites" thrice daily before meals in a wineglassful of water; try cold sponging; and see what is said above about there being no disease present.

A. H. W.—Try a vegetable dietary, and "Friederichshall" mineral water. The latter we deem a perfect cure and preventive when taken each morning (or oftener) for a time.

M. Wilson.—No; the pad has no advantage that we can see over a flannel protector. Glad our advice has been effective.

Smoker.—We do not approve of cigarettes smoked as you use them. The Strawfena Cigarettes of Messrs. Robinson & Barnsdale, of Nottingham, are the best. We have seen results such as you name from cigarette-smoking, though we do not think the paper has much to do with them. We should advise you to give them up for a time.

Experience.—See advice to "Victor," above.

One Almost in Despair.—Try the effect of a saturated solution of boracic acid used freely to the parts. This will counteract the offensive perspiration; but you are evidently in a low state of health, and we should advise you to have a good medical opinion on your general condition.

Clepington.—Yours is a case for strict attention to the general health. Let your food be of the simplest kind; give up tea and coffee (likewise all medicines); take a little mineral water in the mornings for the stomach troubles; and if indigestion is present a little Morson's "Pepsine," as directed on the bottle. You must try cold sponging in the morning, and have a little open-air exercise. You will grow well by common care, not through tampering with all kinds of drugs.

Vox Humani.—Seeing that the voice depends upon the shape and size of the larynx, the nature of the vocal chords, &c., we can only say that any one's voice may be "improved" within certain possible limits. The gentleman you name has a voice of full compass, improved and strengthened by much hard training. It is impossible to say how far your voice can be "trained." See Gordon Holmes on "Voice and Voice Production" (Chatto & Windus)—a work we reviewed some time ago in Health. Modes of treating the voice will be found described therein.

Canton.—Thank you for your cheery letter. We are glad to hear our advice has put your troubles in a new light. The powder you enclose of "quack" production is probably sulphate of zinc. It is regretable to hear of a chemist in league with a quack.

H. King.—Thanks for your kind letter. The safest advice is that which teaches you to work cheerfully and hopefully always.

Mon Frère.—We should advise you to make a change as complete as possible in your dietry. Try a vegetable diet for a time. See to the ventilation of your bedroom. The first drug you name may cause headache. You do not say why you take it. The tonic recommended to "Victor" in present number will do you good.

A Lover of Health.—The prescription may safely be tried. If not successful, we shall be glad to advise further.

Esca.—There is no special book for your case, but Dr. Chambers' book on "Diet in Health and Disease" should suit you admirably. The book costs 10s. 6d., and is published by Smith, Elder, & Co.

A. H. Sexton.—See reply to "Victor" in present number.

Y. K.—You are generally "out of sorts." We should firstly recommend you to try a little Friederichshall Water each morning, and to leave off all stimulants. With food (avoiding tea and coffee) take a little Morson's "Pepsine" as directed. Never mind the phrenology, and don't worry over any "causes" of disease you fancy you know of. Such fears are groundless. In your case cold sponging will do good; and, of course, your mental condition requires looking to. In the other matter, we cannot presume to advise you. Hereditary disease is always terrible.

Implement Works.—No; the fluid is not what you suppose it to be. Try cold sponging every morning, and follow the advice given to "Victor" above. The medical man you name is a "qualified quack"—you can perhaps appreciate the appellation. No member of an honourable profession would advertise as he does; and his claims for mention as a successful doctor are, we think, of the most meagre description. Have nothing to do with him. Be cheerful, and rest assured you are perfectly healthy—only a little nervous about yourself.

Dereham.—See advice to "Victor" in present number of Health.

Quicklime.—The ear trouble corresponds to that advised for in the case of "G. T." above. See an aural surgeon. We think in your case the following will do much good:—Syrup of iodide of iron, three drachms; mucilage acaciæ, one ounce; cod-liver oil to

make up six ounces. A tablespoonful thrice daily. The use of this will likely benefit your ear and other affections.

Southampton.—What you mention is quite common in health. See advice to "Victor" above.

A Constant Reader (please use a more distinctive name) may be recommended to purchase Mr. Banting's pamphlet on "Corpulence" from Harrison, Pall-mall, London, and study what is therein said about the rational way of decreasing stoutness. We shall shortly publish papers on "How to get Thin or Fat."

Atra Cura.—Why not give a good tonic a fair trial? Try Fellows' "Hypophosphites," which we have seen do much good in cases such as yours. Try this, and in event of any laxative being required, take "Æsculap" water in the morning. Yours is a case for tonics, fresh air, and generous diet—not for aperients. Write again if not improved.

Dim Sight.—Probably an affection which judicious advice regarding the wear of glasses will remove. Write to Mr. Browning, 63, Strand, W.C., for his method of suiting the sight with glasses. Such a method applied now may save your vision from ultimate weakness. The cause you mention had nothing to do with your ailment, in our opinion.

Chelsea.—Try the cod-liver oil and iron, as recommended to "Quicklime" in present number of Health. If that does not suffice, write again. The medicine is a fat-producer and tonic as well. Don't overdo your exercise.

J. M. Calton.—Try the effect of a lotion of three drachms of sulphur, four drachms of glycerine, and four ounces of rectified spirit—this to be applied at night to the eruption.

Trike.—Local irritation. Look well to your garments, and see there is no injurious dye about any of them. There is possibly too great friction. No treatment required beyond a little Vaseline applied locally, a slight aperient, and rest.

R. Whyte.—No; no injurious effect whatever. You are in very good hands, and cannot do better than obey all directions.

Toujours Loyale.—Where have you ever heard of an authenticated case of poisoning by absorption of carbolic acid from dressings? Don't you know that a whole system of surgery (antiseptic) is daily practised with this treatment? Send us any details; but we must say, we think you labour under some misapprehension.

Ora Pro Nobis.—Try change of dietary, and avoid vegetables for a time. Give up tea and coffee, and try cocoa instead. Rest after meals, and take moderate open-air exercise. Write again if not improved. A little Pepsine with your food may also assist you; or the following:—Carbonate of ammonia, one drachm; bicarbonate of potass, a drachm and a-half; infusion of chiretta, six ounces. A tablespoonful thrice daily before food.

W. M. M.—We think that under the whole circumstances of your case you should see a good physician. Send us your name and address. The person who advertises we know nothing of. We should not advise you to consult any one who advertises.

Mars.—We think you possess a special idiosyncrasy or tendency to cold—a not uncommon feature, and one which may or may not depend on a low state of the system. What we should recommend would be to try the effect of cold sponging each morning and the tonic recommended to "Victor" in present number. Write again if unimproved. Be cheerful—another piece of advice worth attending to.

E. Lowe.—We should always be glad to advise you in all ways, to the best of our ability. The case you mention is one of over-anxiety and over-education. What we would recommend is, firstly, a *prolonged rest* of months. This may seem hard, but it is necessary. The patient should simply rest; and if you can afford a visit to Southport or Blackpool (still resting) it would do much good. Let the patient also take a teaspoonful of Fellow's "Syrup of the Hypophosphites" thrice daily before meals in a wineglassful of water. We should like to hear full particulars about patient's personal health in all ways, and the nature of the strain, and how it affected any natural functions. Glad to advise further, if necessary.

Wildfire.—Smear the hands with pure Vaseline every night. Write if not successful in curing.

Fred. W. C.—The effect of our former recommendation, from your account was, we think, to bring out your trouble to the surface. Try now the tonic recommended to "E. Lowe," above; and let us hear how you are after a trial thereof.

J. Fletcher.—Yes; Koumiss is well known, also Mullein. We approve highly of the Maltine Company's preparations, in which malt is added to sundry "foods." Try the maltine and cod oil, and see what effect ensues. Our papers on "How to get Thin or Stout," will shortly appear. A visit to the seaside, by increasing the appetite, may also do much good. "Cod-oil Emulsion" alone should also suit your case; with plenty of fatty articles, mutton chops, cream, butter, eels, &c. Glad to hear from you again. See to the patient's general health.

D. Maclean.—Try first the effect of the cod oil prescription ordered to "Quicklime," in present number, and write again after a trial of the medicine. Clothe warmly and avoid chills.

W. H. Harvey.—Both of your queries may be answered by referring you to the reply to "W. Scott," in Health, No. 24.

X. Y. Z.—Try the following:—Carbonate of ammonia, one drachm; tincture of squills, three drachms; compound tincture of camphor, half-an-ounce; infusion of senega to make up six ounces. A tablespoonful every four hours. After one trial of this let us hear from you again.

A. W. G.—1. We believe the "food" you name to be thoroughly good. 2. Thanks for suggestion, but at present it is impracticable in journalism.

W. Sutton.—Certainly; try Morson's "Pepsine" by all means, as directed on the bottle. Glad to hear yon are improved. As the vegetable dietary does not agree with you, try the effect of milk, light puddings, &c., for a time. For the back ailment try cold sponging each morning, and brisk friction with a flesh-brush.

Squip.—Our advice to you is to see a good surgeon (avoid quacks). Take the following:—Iodide of potass, two drachms; infusion of calumba, six ounces. A dessertspoonful thrice daily. Dress the sore surface with glycerine of borax.

F. G. S.—We do not recommend the medicine you name. Read Banting "On Corpulence" (published by Harrison, Pall-mall, London). The only rational way of reducing size is to modify diet. The circular you mention shows once again the "old stage-trick" of the quack.

Eyesight.—Our previous opinion is confirmed by your letter. See to getting a good pair of spectacles adjusted to your sight by the method of Mr. Browning, 63, Strand, London, to whom write for particulars.

Estomago.—Try the following prescription, which will ease and cure the symptoms:—Carbonate of ammonia, one drachm; bicarbonate of potass, a drachm and a half; infusion of chiretta, six ounces. A tablespoonful thrice daily before food. Write again if unrelieved.

Jane Moody.—1. By no means use any lotion for the head containing (as your lotion does) lead. See our papers on the "Hair" in Parts I., II., and III. Health. 2. See advice to "Fylde" in No. 24 Health.

Sedaem.—The quantity of ozone varies greatly in different places. There is no rule for its distribution, but it exists in greatest quantities by the sea and in mountain air.

Juvenis.—We do not recommend you to tamper with the mixture you name. See a good dentist, who will destroy the nerve for you.

Inceptor.—Caviare is the preserved roe or eggs of the sturgeon—a great delicacy.

Hope.—No connection between the red nose and the symptom you name. For the former, try a vegetable dietary, and avoid stimulants. Attend carefully to general health.

Athos.—Never heard of the preparation. It might, however, be tried. We do not know where it can be procured. There are one or two vegetable lotions we have seen tried with good effect. We believe in iron given internally, with careful attention to the health generally. Some cases resist all remedies, if the health is low.

C. C. Wilson.—Try nearer the North—Highgate and Hampstead.

H. W. B.—Your symptoms are those of slight weakness, for which the best remedy would be a thorough change for a week or two. Drink freely of potash water for the symptoms you name. There is no need to be alarmed. Possibly you are closely confined; if so, try open-air exercise.

Sufferer.—We have found cold sponging in the mornings, with brisk friction by means of a hard towel thereafter, a capital preventive of cold and of liability to chill. Try this, and clothe warmly.

A. Grey.—As all letters are destroyed, and as we cannot be expected to keep your particular case in mind, kindly re-state your wishes. So far as we can discover from your letter, the preparation should be fluid, not thick like a pomade.

Mrs. Wood.—We had never heard of the dentist or the method you name. We can form no opinion regarding the apparatus from the meagre details sent. If a sample of the apparatus is sent to us, we shall be glad to submit it to Mr. Carpenter for his opinion.

Fides.—The "tonic" may be known abroad. It is not known here. The public should be highly suspicious of all such preparations. These "Phosphorus" tonics are often so only in name. Our future programme includes such papers as those you name.

F. S. C.—No medicine can accomplish what you wish. Your only hope is careful treatment to remove any abnormal condition, and, above all, sound general health, in the absence of which your hopes cannot be realised. There should, from your present account, be no difficulty in attaining the desired end. Let the "opposite side" be careful and moderate in all things. Take plenty of rest. Glad to advise further if necessary.

H. G. S.—See advice to "Victor" in present number. Be cheer-

ful, and know that you suffer from no actual disease—only a slight weakness, which time and care will improve.

Thomas.—You would see the quacks you name were publicly noticed in the Dublin Police Court.

A. N.—1. No; the two preparations are widely different, and each must be judged on its own merits, and for each special case. 2. Oiled silk is preferable. The object is simply to prevent evaporation.

J. B. W.—Yes; to read during meals is commonly reckoned as physiologically erroneous—we won't say as absolutely injurious. The theory is, that as the stomach and other organs require (and exert) nervous power during digestion, it is better to allow nothing to interfere with their work. We do not say that this can be borne out; but the feeling of satisfaction which follows a meal, and which is often accompanied in good health by drowsiness, probably indicates that a certain amount of nervous exhaustion occurs during digestion. The pleasant chat of a dinner-party is probably of value physiologically as supplying a slight mental stimulus, without making too severe demands on brain and nerves. If any evidence exists at all on the subject, we think it tends to discourage reading at meals.

J. Lucas.—Thanks, many, for your kindly words. We shall always endeavour to aid the causes you name. 1. No positive cure for corns save extraction. Touching with caustic repeatedly may cause the corn to degenerate. 2. Good glasses, tested accurately, as by Mr. Browning, 63, Strand. Spectacles properly fitted do wonders. Guard your eyes at night with a shade. 3. The ear-noises are a symptom of slight head-overwork, we should fancy—if not caused by wax. Try rest, cold to the head, and the tonic recommended to "Victor" above. 4. Salt assists digestion, for the reason that certain compounds of the gastric juices are elaborated therefrom.


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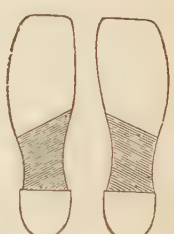

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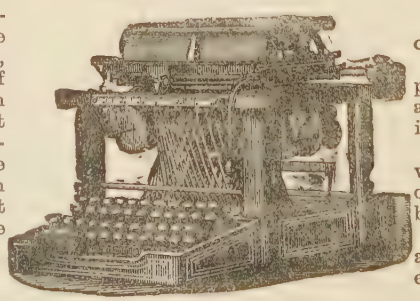

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# HEALTH

EDITED BY

DR. ANDREW WILSON, F.R.S.E., &c.

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## Notes by the Way

"Health is the foundation of all our physical happiness."—*Herder.*

Now that "chill October" is upon us, the usual amount of coughing, sneezing, and other symptoms of that annoying ailment "a cold," is heard around us. There are very few persons indeed who escape colds of one kind or another, just at the advent of autumn, when the summer's warmth is exchanged for fogs and chills. And there is no question that to very many, even a "cold in the head" is a serious enough matter, affecting as it does both eyesight and nose—to say nothing of temper and placidity of mind. If one could invent a panacea for cold in the head, there would be no question of the rich reward which would await the successful inventor. But there is no such thing as a universal cure and preventive. In the attempt to avoid colds, the great secret of success is summed up in the words, Keep up a high standard of general health. In the great majority of cases people "catch cold" because their health is below par. We know of a case or two in which a business worry renders the subjects thereof liable to a severe cold, if exposure to the conditions for cold follows. The person who feels "out of sorts" is notably liable to contract a vast number of complaints which his healthy neighbour avoids. Amongst these complaints none is more frequently caught than a "cold."

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"WHAT are the general conditions which suffice to ward off liability to colds?" is a question frequently put in the correspondence columns of this journal. The question indicates a belief that we are able to name some drug which will lessen the liability to the affection in question; and doubtless many correspondents feel surprised that no such advice can be given. What people should know is the simple fact that cold, as often as not, attacks only those whose health is not what it should be; and the lesson we learn from this well-grounded belief is simply an oft-repeated one, "Prevention is better than cure." From a cold in the head to typhoid fever, the lesson holds true. It is only when people begin to understand how much power over their health they hold in their own hands that we find the search after "something which will cure everything" is given up. After all, it is a much simpler thing to prevent disease than to cure it; and as regards the expense which we save by "taking care of our carcases" (as the frank Americans put it), no demonstration is needed to show that any money spent in avoiding diseases, and in keeping well, is worthily disbursed.

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To keep entirely, or, at least, tolerably, free from colds is by no means a difficult task, provided we observe some such facts and laws as the following:—Firstly, we should attend to the ventilation of bedrooms. Many a case of cold arises from persons sleeping in a warm, ill-ventilated room, and from the sudden plunge into the colder air of the house which inevitably results in the morning. An equable temperature is one great preventive of colds. This explains why, in the equable temperature of the seaside, colds are less frequent than in towns. Secondly, we are firm believers in the preventive value of cold sponging each morning. Of course, everybody cannot take a cold bath all the year round, but those who do so diminish (other things being equal) the tendency to cold. But most persons are able to sponge the chest every morning, and thereafter to practice brisk friction with a rough towel. By this means a tendency to chest colds in particular is prevented, and the general health is also largely benefitted.

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As regards clothing, there is little to be said here. Of all follies, surely the worst is the practice of clothing in materials which, either from their make or their weight, are insufficient to protect us against chills. Heated rooms, evening dress, and the draughts of lobbies, explain a very large number of the colds from which we suffer; but the day of common sense in ventilation and in amusement has not yet dawned, and till that happy era arrives "the sound of the sneezer" will be heard in the land.

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PROFESSOR FERRIER'S "snuff" for colds in the head is a useful application, which deserves to be widely known. It consists of hydrochlorate of morphia, two grains; subnitrate of bismuth, six drachms; and gum-acacia in powder, two drachms. Exercising due care in its use, from a quarter of this quantity to half, may be employed in the course of twenty-four hours. Lastly, it should be borne in mind, that a change of air (and, in our experience, a change to the seaside) for even a few hours, will sometimes cure a severe and obstinate cold in the head, when all other remedies have failed.

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THOSE who know Folkestone, will remember the statue of William Harvey, the discoverer of the "Circulation of the Blood," which adorns the Lees of that town. The remains of the great physiologist now lie in the vaults of Hempstead Church, Essex; but the body, we learn, is to be removed, with the consent of the next of kin, to the Harvey Chapel, where it will find an appropriate resting-place in a sarcophagus which the Royal College of Physicians of London has provided for it. This interesting ceremony is to take place on the 18th of the present month. Medical science does well thus to honour the memory of the man who laid the foundation of our knowledge of the heart and its work. It is a curious but interesting thought that a child to-day may in a few hours learn from a shilling primer of physiology, what, in the

history of science, it took centuries to discover. Do we always value, as highly as we might, the knowledge which so readily lies to hand to-day?

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The "silly season" of the year has lately been productive in the pages of the newspapers of some discussion on questions of a physiological kind. There have appeared long arguments regarding the dinners of city clerks, and concerning the impossibilities which lie in the way of Paterfamilias finding a sanitary and otherwise suitable domicile. Such discussions effect much good. When one correspondent suggests that a vegetarian dinner is the correct meal for the clerk, the remark is certain to set people a thinking, or even experimenting upon novel phases in diet. When some one suggests that a fish dietary might with advantage be tried, the suggestion may awaken curiosity regarding the nutritive properties of fish. Questions of such supreme social interest deserve wide mention. As a nation we are certainly inclined to tread very closely in the ways of established custom, and there can be no doubt that we close the door to many advantageous changes in the way of diet by our too rigid adherence to the ordinary foods. As we have already pointed out, there can be no hard and fast rule for all in the matter of food. The question of what to eat is one eminently adapted for individual experience to determine; and, indeed, most of the vexed questions in diet can and will be solved only by the intelligent study by individuals of what is best suited for their easy digestion.

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The latest addition to the list of useful medical substances is skate-liver oil. Mr. Henry, of Macduff, prepares this substitute for cod-liver oil. The skate oil is described as being of thinner consistence than the cod oil, and as being less unpleasant to the taste. We should require, however, to see an analysis of the oil before deciding regarding its merits as a substitute for the cod oil. The skate belongs to an entirely different (and, geologically, more ancient) family of fishes from the cod; and it is possible, or even probable, that very important chemical differences exist in the oil derived from its liver when compared with that of the cod.

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Baths, whereof the hot water is produced by the action of gas, are no doubt, handy enough, but that they have their special dangers is clear from the report of a fatal case which recently formed the subject of a coroner's inquiry at Brighton. Rendered drowsy by the foul air of the bath-room, the unfortunate person was killed partly by suffocation, and partly by scalding. The evident moral of this recital is, that in all cases in which gas is used to heat water in bath-rooms, there should be abundant ventilation.

Medical and Sanitary Exhibition, 1881.—Award of Merit.—Diabetes. Van Abbott's Gluten Bread, and all other suitable Foods for Diabetic Patients. Dietary Tables and Price Lists post-free on application. Van Abbott, 5, Princes-street, Cavendish-square, W.—Delicate Children and Adults Suffering from Nervous Depression. Van Abbott's Hypophosphite of Lime Biscuits, for Delicate Children, especially those suffering from Deficiency of Bone, Weak Joints, or Debility, and Adults suffering from Nervous Depression. Each Biscuit contains five grains of the Hypophosphite of Lime. "Quite free from disagreeable taste, and taken willingly by Children, and certainly provide an excellent means of administering this valuable compound. Our analysis proves the accuracy of the printed descriptions on the labels of the boxes. The Biscuits were suggested by Mr. W. Adams, of the Orthopædic and Great Northern Hospitals." — *Lancet*, Nov. 4, 1876.—Van Abbott, 5, Princes-street, Cavendish-square.—[Advt.]

# Original Essays

"Life is not to live, but to be well."—*Martial.*

## TYPE-WRITERS AND WRITER'S CRAMP.

The "type-writer," of which most of our readers must have heard, is a machine in which, by pressing upon a series of "keys" arranged in a key-board, in front of which the operator sits, printed characters, corresponding to the keys selected, are duly impressed upon paper. The machine in this sense is not a "writer." It does not trace written characters, as does the pen. It is a handy printing-machine, which can be manipulated as easily and as readily as the pen, and which, moreover, may not only exceed the pen in speed, but prints characters that are always legible and clear. The growing popularity of the type-writer is due, we fancy, to two causes—the legibility of its work, and the high rate of speed which the practised operator can attain form the first of these causes. The second cause has a medical basis. Persons who write much, often suffer from weariness of the muscles of the right arm and fingers. A more serious disease, termed "writer's cramp," is also known to occur in many who earn their bread by the pen. The use of the type-writer abolishes the tendency to this disease, owing to its bringing into play muscular combinations which are unknown in the use of the pen; and even the alternate use of pen and type-writer has been highly commended as a pleasant variation to all who have much to do with literary pursuits.

The history of the type-writer, like that of all other inventions, is one of modification and evolution. M. Foucault exhibited in Paris, in 1855, at the Exhibition of that year, a writing machine adapted for the use of the blind. Therein, certain types were pressed against carbonised paper, which was laid in turn over the white writing-paper, and in this fashion impressions of the letters were obtained. Subsequently, various attempts were made to produce a perfect type-writer; but it was not until 1873 that America gave us the machine which, with certain improvements, stands before us in 1883 as a highly useful substitute in all ways for the pen. The "Remington" Type-writers are those to which we allude. They are to be inspected and purchased of Messrs. Beeman & Roberts, the English agents, of 6, King-street, Cheapside, London. We can assure our readers, not only from personal acquaintance with, and constant use of, a type-writer, but from a knowledge of the value and advantages of type-writing work, that they will not grudge the time they may bestow in an examination of a mechanical apparatus of extreme interest, and one destined, we believe, to largely obviate a disease—"writer's cramp"—which many a clerk knows only too well.

The "type writer" which stands before us as we write, appears as an oblong box about 16 in. in length, height, and depth. On uncovering the "writer," we see a cylinder on which the writing-paper is wound, and which, in conjunction with a roller, brings the paper into the proper position for contact with the types. Raising the cylinder, we look down upon a hollow cavity whose sides bristle with wires. These wires bear each a type, and when, looking down at the key-board, we press one of the keys marked, say "M," we see that the corresponding letter borne on the end of its lever at once flies out of its rank and file, and strikes upwards, towards the point where the paper would have appeared if the cylinder had been left in its place. Running across the space above the types, and coiling and uncoiling on a drum at each side, is an inked

ribbon. This ribbon moves automatically as the types are worked, and as it passes between the types and the paper, it follows that as each type strikes the ribbon, it leaves an inked impression on the paper above. Each type is made to rise exactly in the centre of the open space to which we have alluded. Four rows of keys form the key-board. The characters—which vary in style in different type-writers, and which present us with one or more "founts" according to the make of machine—include the alphabet, numerals, punctuation-marks, and other items necessary or useful in correspondence and literature, generally. Lowest down, is a "bar," which, on being touched, causes the paper-cylinder to pass onwards, but without bringing any corresponding type into play. This is the "spacing bar," wherewith the necessary spaces between words and sentences are made.

Sitting thus in front of the type-writer, we press the keys—the paper being adjusted on the cylinder. We begin our line, and work with both hands, very much in the fashion of a piano-player. Attending to the spaces and punctuation, we readily, after a little practice, form our line; but as we near the end of the first line of the manuscript, a bell rings. This is the automatic signal that we must make arrangements for finishing the last word of the line, or for duly breaking it in two and transferring part to the next line. At last the end of the line is reached, and a new line has to be begun. This is contrived readily, simply, and instantaneously. We press a lever placed at the right hand of the machine. The paper-cylinder is thus released, is carried back to its starting point on the right side, while at the same time the cylinder is made to revolve on its axis so far as to give sufficient space between the line just printed, and that which is to come. If we wish to economise paper, we may make the space between the lines narrow by adjusting a small key at one end of the cylinder. This key, in turn, and when otherwise set, is made to enlarge the space between the lines. When any one type has been pressed and has made its impression on the paper, no further trouble is needed on the part of the operator, for that type instantly falls back by gravity to its place, ready to be again used. It is this reduction of all useless or avoidable labour which has placed the type-writer in the foremost rank of mechanical appliances; and it is similarly this ingenious placing of every advantage in the way of ease and time to the operator's credit, that enables writing with this machine to be rapidly executed.

Regarding the rate at which words may be formed by the type-writer, much, or indeed everything, depends upon the skill and practice of the operator. Here, as elsewhere, "practice makes perfect," and the daily use of the machine tends to a quicker style than where intervals are allowed to elapse between its employment.

*(To be continued.)*

## MEDICO-ELECTRICAL APPLIANCES AND THEIR EMPLOYMENT AS AIDS TO HEALTH.

By Wm. Lant Carpenter, B.A., B.Sc., &c.

EIGHTH PAPER.

At the meetings of the British Association as at present organised, while the meetings by day are divided into sections, corresponding with the various branches of science, two of the five evening meetings are devoted to lectures of a less technical character than the sectional papers, and these lectures are given before the whole Association. At the recent meeting at Southport, one of these two lectures was given by Professor McKendrick, Professor of Physiology in the University of Glasgow, who took as the title of his address, "Galvani and Animal Electricity." We propose to give our readers some account of this lecture, which was a masterly summary of the present state of knowledge of the subject, as well as an experimental demonstration, given before an audience of more than 2,000 people. The lecturer commenced by referring to the experiments of Galvani at the University of Bologna in 1786 on the contraction of frogs' legs near an electrical machine, and on their subsequent use in experiments with atmospheric electricity, which led to the idea, afterwards disproved, that the nerves conveyed electricity from the brain and spinal cord to the muscles. Volta's researches, and demonstration that the electricity was due to the application of heterogeneous metals to the flesh, were then described, and the invention of very delicate galvanometers for the purposes of such researches was alluded to in passing. In 1837, Matteucci, of Pisa, discovered that the interior of a muscle was in an electrically negative state, compared to its surface as positive. Then in 1841 and following years came the wonderfully delicate and beautiful researches of Du Bois Reymond, the present Professor of Physiology in the University of Berlin, and the methods employed in these were described and illustrated at some length by the lecturer, an image of the actual apparatus employed being projected upon a screen; another screen received the spot of light reflected from the very sensitive galvanometer needle, the movements of which were thus made visible to the whole audience. In experiments with muscles, it was necessary to have an arrangement which, while touching the muscle, caused no current in it, and yet drew off to the galvanometer any current produced by the muscle. For this purpose, zinc troughs filled with solution of sulphate of zinc, clay points saturated with the solution, and blotting-paper, answered best. With the aid of this apparatus, the lecturer actually demonstrated to his audience the so-called muscle-current which passes between the interior and exterior of a muscle, when one is cut; two uninjured surfaces of muscle produced no such current. A similar, but weaker, current can be obtained from living nerve. Having shown the existence of this muscle-current, Professor McKendrick made further experiments to demonstrate what is technically called the "negative variation," *i.e.*, the diminution in this current when the muscle is caused to contract by stimulating its nerve, and he stated that refined experiments showed that this change really occurs before the muscle contracts; hence he was disposed to regard this electrical change as the physical expression of the chemical changes occurring in the muscle, antecedent to the muscular movement. The electro-motive force of the natural current of a frog's muscle is about $\frac{1}{8}$th of a volt. This negative variation passed in a wave from the point of irritation over the whole muscle. As a good instance of these muscular currents, the living heart of a frog, isolated from the body, was projected on the screen, and while there, the necessary connections were made with the galvanometer, which showed the current developed at each beat. Being near the lecturer, the present writer was able to see that this frog's heart sustained, and caused to oscillate, a column of mercury about $1\frac{1}{2}$ in. in height! Then the lecturer gave a successful demonstration of the fact first announced by

Barnes's Impermeable Opium Poultice, an effective and perfectly safe application for relief in neuralgia, gout, rheumatism, painful swellings, and lumbago. Prices by post 1s. 3d. and 2s. 5d. 1 and 2, Trevor-terrace, Knightsbridge, S.W.—[Advt.]

Professor Dewar and himself, that when light falls on the retina, or nervous network, of the eye, an electric current was developed therein, and this again he considered to be the physical expression of chemical changes occurring in the retina. In the last of the demonstrations, the lecturer showed that when the muscles of his own arm contracted, electric currents were apparently produced in them, although it was just possible that these variations in the current might be due to differences of contact between the fluid and the skin. After pointing out that electrical changes were produced by all kinds of vital phenomena, *e.g.* secretion, Professor McKendrick very briefly described the anatomy of electric fishes, whose electric organs were supplied with very large nerves; he regarded the discharge of one of these in, *e.g.* a torpedo, as a series of smaller currents, just as the contraction of a muscle as a whole is really due to the separate contraction of the numerous fibres composing it; they might be considered as a modified muscular apparatus which, when stimulated by nerves, gave, not motion, but electricity—another instance of the so-called correlation of forces.

In summarising his lecture, Professor McKendrick said that all these electrical changes were really expressions of the vital changes occurring in living tissue under the action of stimuli. In most animals, including man, the production of electric currents was an incidental phenomenon, indicating the occurrence of certain chemical reactions, and, nothing more. Besides, the currents so produced were feeble and evanescent, and bore no relation to the general well-being. Consequently, all attempts to influence the body by the action of magnets had no rational basis, and in this connection the lecturer referred his audience to the present series of articles upon this subject in HEALTH, speaking of them in terms of high commendation. The so-called phenomena of "animal magnetism" were of a subjective character, dependent upon peculiar states of the nervous system, and had nothing whatever to do with electricity and magnetism. Their subjective character, however, rendered them very difficult of investigation, and hence they were very liable to fall into the hands of the charlatan. One safeguard against this was the recognition of what the electrical phenomena of the living body really meant, and one purpose of the lecture would be served if it showed that to detect and account for these phenomena required the most refined methods of the physicist and physiologist, and that they gave us only a glimpse into the intricate changes occurring in living tissue.

At the conclusion of the lecture a vote of thanks was proposed to Professor McKendrick by Professor Ray Lankester, the President of the Biological Section. In the course of his remarks he again alluded to the injurious nonsense talked at the present time about animal magnetism, electro-biology, &c., and said it could not be too strongly impressed upon the public that unless the alleged electricity could be measured in its development and application, in connection with human beings, it was practically an imposture.

In our next article we propose to give some account of Dr. W. H. Stone's paper, read at the Southport meeting in Section D (Biology), upon "The Electrical Resistance of the Human Body."

"How to Obtain Light from Coal Gas," is the title of a small *brochure* by Mr. A. Clarke, 30, Watling-street, London. It may be profitably perused by all consumers of gas, indicating as it does briefly but clearly, the means by which the highest illuminating power may be produced with the least expenditure of gas. The author's theory of the proper method of burning coal gas as an illuminant is summed up in the following observation: "Reduce it to 'a moderately low pressure' before it reaches the point of ignition, where it should be *heated* before being consumed."—[Advt.]

## SANITARY GOSSIP.

By "Sanitas."

Hygiene in Pagan Times.—History teaches us that the science or knowledge which relates to the physical condition of man—to the means by which his health may be sustained and his life prolonged to old age—was cultivated in pagan times by the early Greeks and Romans; independently, likewise, of the pathological treatment of disease. So far back as between six and seven hundred years before the birth of Christ, Herodicus and Pythagoras, two Greek physicians, wrote upon sanitary subjects, and recommended gymnastic exercise, not only as means of preserving health, but in the treatment of disease. Another Greek doctor, named Asclepiades, of Bithynia, a great traveller, who flourished about a century or so preceding the Christian era, is said by Pliny (although the latter had little respect for him) to have used only five medicinal remedies, namely:—1. Abstinence from flesh meat; 2. Abstinence from wine, under certain circumstances; 3. Friction; 4. Walking; 5. Gestation, or carriage exercise. By these he proposed to open the pores, and let the corpuscles, or little molecules, which were believed to cause disease escape in perspiration. For his leading doctrine was, that all disease arose from an inharmonious distribution of the small formless atoms of which the body is composed.

Soap and Civilisation.—The late Lord Beaconsfield, in his Disraeli days, is credited with the aphorisms that "soap and civilisation" should be defined as "cause and effect," and that "the study of the public health is the first study of a statesman." How these principles are illustrated we were told by Charles Dickens, at a dinner in London, on May 10, 1851, where, in the course of a speech on Sanitary Reform, he said:—"That no man can estimate the amount of mischief grown in dirt. That no man can say the evil stops here or stops there, either in its moral or physical effects, or can deny that it begins in the cradle and is not at rest in the miserable grave, is as certain as it is that the air from Gin-lane will be carried by an easterly wind into Mayfair, or that the furious pestilence raging in St. Giles's no mortal lists of lady patronesses can keep out of Almack's. Fifteen years ago, some of the valuable reports of Mr. Chadwick and Dr. Southwood Smith, strengthening and much enlarging my knowledge, made me earnest in the cause in my own sphere; and I can honestly declare that the use I have since that time made of eyes and nose, has only strengthened the conviction that certain sanitary reforms must precede all other social remedies, and that neither education nor religion can do anything useful until the way has been paved for their ministrations by cleanliness and decency."

Infantine Mortality.—In one of his excellent lectures, the veteran sanitarian, Mr. Chadwick, tells us:—"The best general test of sanitary conditions I take to be the death-rate of children under one year, as the condition of children is to the least degree affected by occupation or migration, and as such conditions denote intelligent care of infant life. Of children, one in seven died within the first year of birth in this county of Northamptonshire." It seems to me that "intelligent care" cannot be considered in connection with such a mortality, when we find exactly the same death-rate to have prevailed elsewhere, owing to a cause that was removable; for, during the earliest quarter of a century after the establishment of the Dublin Lying-in Hospital, out of every seven children born in it one died. The cause of such a prodigious mortality was found to be the want of proper ventilation in the hospital wards; and as soon as this defect was remedied, there resulted only one

death out of 104 births. Here we have 325 children massacred during the first quarter of a century by the same poisonous agency that on the night of June 18, 1756, destroyed 123 out of 146 of the British subjects who were forced into the Black Hole of Calcutta by order of Sarajah Dowlah, a Nabob of Bengal. That dungeon was only 18 feet square. Out of 1,000 infants under one year old there die yearly—In Sweden, 141·8; in Denmark, 137·5; in England, 182·6; in France, 223·2; in Spain, 249·6; and in Italy, 273·3. At some future time I shall explain the chief reasons for this high mortality on the Continent.

Hygiene amongst the Bees.—In our young days we used to read :—

> How doth the little busy bee
> Improve each shining hour,
> And gather honey all day long
> From every opening flower!

But though Dr. Watts celebrates the industry of the busy bee, he tells us nothing of its hygienic practices. Perhaps this is because he may not have known of the wonderful discipline kept up in connection with honey-making, so as to have a perpetual supply of fresh air. A bee-hive is as pure inside as the open air outside, in spite of all the cells of closed wax, that, to a casual inspector, seem as if impervious. For it is known to observers of their manners and customs, that although a beehive has only one door to it, and no windows, all through the night and day from twenty to thirty bees fix themselves on the floor of the hive, and cause ventilation by flapping their wings. At night the number is increased, and in this the bees show their sagacity over many nations and peoples of the world, who believe night air from outside to be injurious, and ignore the fact that the night air of our sleeping-rooms, when these are shut up, is of the densest poison. The wing-flapping wafts the fresh air through the hive; and when four or five bees fall out exhausted, others take their places, so as to keep the air fresh. In the warm weather, when the honey-making becomes more vigorous with the opening flowers, the fanners are seen flitting outside of the hive in front of the door, to add to the air, as a captain of a ship claps on more sail when the exigences of his voyage demand it.

Seaside Drinking Water.—The unsatisfactory state of the water-supply in many of the smaller and some of the larger watering-places at home and abroad attracts increasing attention. Hastings and Margate are very badly placed in this respect. But is it not possible that the deductions from chemical analysis have sometimes been a little too severe? The presence of chlorine in such water, obviously proves nothing but an infiltration of sea water. But the water is sometimes condemned on the evidence of organic carbon and nitrogen found by Frankland's process; and it is not generally known that sea water, even when uncontaminated with sewage, yields a great deal of organic carbon and nitrogen. The extent to which infiltration of sea water has taken place can be measured approximately by the chlorine, and this enables a correction to be applied to the carbon and nitrogen. In chalk waters the presence of nitrates affords no evidence. On the other hand, the albuminoid ammonia affords a valuable indication, as pure sea water yields almost none.

Figure-Beautifying Corsets.—Every lady should send for illustrated circular of the "Ideal," patented. The only corset regulated to impart any degree of fulness and beauty to thin busts. Prices: 8s. 3d., 10s. 9d., &c.—H. Evans & Bale, 52, Aldermanbury, London.—[Advt.]

# The Body and its Structure

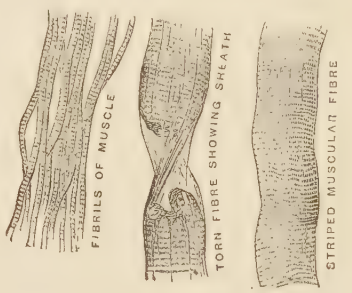
"The proper study of mankind is man."—*Pope.*
"What a piece of work is a man!"—*Shakespere.*

## NO. XX.—MUSCLES AND THEIR WORK.

By A. J. Manson.

"Muscle" was shown in our last article to be that tissue of the living body by aid of which all ordinary movements are executed. We also saw that many movements connected with the circulation of the blood, digestion, the expression of the emotions, &c., owed their origin and existence to the work of muscles. It now remains for us to regard muscles from that point of view which seeks to note the details of their structure and build. In such an inquiry we may discover that certain familiar facts of everyday life may materially assist us in gaining an adequate knowledge of what muscle is, and what muscle does.

When we examine closely a slice of cold roast-meat as it lies on our plate at table—for beef is the "muscle" of the ox—we may readily see that it consists of a number of coarse fibres, closely packed together. The more "stringy" the meat, the larger and the coarser are these "fibres."




Fibres of Voluntary Muscle (magnified).

Now, when these "fibres" of a muscle are narrowly scrutinised, they are seen in reality to consist each of a bundle of fibres. The anatomist calls the bundle a *fasciculus*. By aid of a little care, it is easy to tease out such a bundle of muscle into its component fibres. We know that the size and number of the bundles of fibres in a muscle vary with the muscle itself. In the hip-muscles, and in the *deltoid* muscle of the arm the bundles are large and coarse; while in such a muscle as the *gracilis* the bundles are of finer nature. Again, the number of fibres contained in a bundle is subject to variation. Some bundles contain a greater number of fibres than others, and as we may now note, there are two kinds of fibres and two corresponding varieties of muscles to be found in the bodies of man and the higher animals at large.

The first kind of muscular tissue met with in the body is that represented in the muscles of the limbs, face, and trunk generally. These are *voluntary muscles*, that is to say, they can be brought into action at the *will* of their possessor. The power of "doing as we like" really depends on the property possessed by this first series of muscles of responding to our will. When we wish, say, to write, to walk, to raise the arm, or to perform any similar action, the appropriate muscles are brought into play through the stimulus given to them by brain and nerve. We "will" to perform a particular action, and we are enabled through the nervous guidance obtained from the brain to execute the act. Hence the term "voluntary"

muscles is a highly appropriate one in this light and aspect of their action.

The second set receives the name of *involuntary muscles*. These muscles are found in the stomach and intestine, in the walls of the blood-vessels, and in other situations. They act independently of the will. Those of the stomach, for example, contract when food enters that organ, and in health we are not only unconscious of their action, but when it has once been set going we have no power of causing it to cease. The heart itself is an involuntary muscle, seeing that we have no command over its movements, but, as will presently be shown, the muscular fibres of the heart are akin in their nature and structure to the fibres of the voluntary muscles, and do not resemble those of the muscles that lie outside the command of the will.

Anatomists have divided the muscles of our frames into *striped* and *unstriped* muscles. The "striped" (or *striated*) muscles correspond to all the voluntary ones of the limbs, head, and trunk generally; and the heart falls into this first category because its fibres exhibit a striped appearance. The second class is that of the *unstriped* (or non-*striated*) muscles. All the involuntary muscles (with the exception of the heart) belong to this division; and we must now proceed to note the characteristic features of each class.

The *unstriped muscles* have their fibres collected into "bundles," and they thus resemble their "striped" neighbours. These "unstriped" muscles, however, never form such well-defined masses as do the striped muscles of the limbs. They are of a paler red colour, and they are found to cross and to interlace one with another when, as in the stomach, they form part of the wall of a cavity or hollow organ. Their individual *fibres* are of large size, and are pale or colourless, varying from the $\frac{1}{3500}$th to the $\frac{1}{7000}$th of an inch in diameter. The most accurate view of each fibre in the unstriped muscle is that which regards it simply as a long "cell." We have already seen that "cells" are the units of the body's structure, and muscles would therefore appear to present no exception to the rule that it is upon "cells" that the work of the body naturally falls.

The "striped" muscles include, as we have seen, all the ordinary muscles of the body, together with the heart. These fibres are cylindrical in shape. They vary in breadth from the $\frac{1}{400}$th to the $\frac{1}{2400}$th of an inch. In length they vary from an inch and a half to much more diminutive proportions. Here again each fibre is regarded simply as a peculiarly modified "cell," and we certainly know that each fibre-cell is formed out of the primitive *protoplasm* or "matter of life," which represented the bodily substance in the early days of its development. Each fibre has a delicate sheath named the *sarcolemma*, (see Fig.) and imbedded in the substance of the fibre we may note certain solid particles—the *nuclei*. The matter of the fibre itself is named the *sarcous substance*, and it is to the peculiarities of this latter material that the "striped" fibres of the muscles we use in ordinary life owe their special characteristics.

When we microscopically examine the fibre of a "striped" muscle, and throw the light through it, we see that it is crossed by stripes of dark and light character, which alternate with one another (see Fig.). This division into light and dark elements is best seen in the muscles of some lower animals, such as the insects, although they are observable clearly enough in the striped fibres of man. It is this alternation of light and dark bands in the fibre which has procured for it the term "striped." The fibre-substance is thus seen to consist of two distinct kinds of elements,—dark, and light. The former refract the light doubly, while the latter refract it singly; the striped appearance being thus produced. But a fibre of striped muscle also shows a tendency to split up crosswise into smaller parts, called the *discs* of the fibre. And when the fibre has been soaked in strong spirits of wine or in chronic acid, it may be teased out lengthwise into smaller fibres called *fibrils* (see Fig.). As has well been remarked, if a fibre could be divided crosswise and longwise at the same time, we should at last get a number of square pieces or particles, of which we might regard the fibre as having been composed. Be this as it may, we may see in the fibre of a striped muscle, simply a structure which has undergone a much higher development and elaboration than its neighbour, the unstriped fibre.

The fibres of striped muscles do not, as a rule, divide; but the muscle-fibres in the tongue and lip and those of the heart branch and unite together. Muscles grow by the increase of their individual fibres. The fibres of the adult are longer than those of the child, and it is also tolerably certain that new fibres may be formed in muscles by the splitting lengthwise of already-existing fibres.

We have to note in our next paper the functions and disposition of some of the principal muscles of the body.

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Health in Classic Times.—As might be expected, it is to the Father of Medicine, the great Hippocrates, that we owe the most of what we have left of Greek hygienic literature, although we must admit that even in Homer there are traces of hygienic knowledge, and that there the disinfecting powers of cleansing fires of sulphur are fully recognised. Another name that deserves remembrance is that of Xenophon, whose triumphant retreat was not less a hygienic than a military triumph. Nor ought we to omit the name of Herodicus, the first to introduce gymnastics on scientific principles, not only as a curative, but also as a preventive measure. The myth which makes Health, or Hygieia, the daughter of Asklepios (whom we call Æsculapius), no doubt arose from an instinctive perception of the value of medical science in preserving health. The famous line of Homer, which is thus rendered by Pope—

> A wise physician, skilled our wounds to heal,
> Is more than armies to the common weal,

shows the estimation in which the military surgeons of those days were held. Would that modern commanders had an equally just and appreciative estimation of the services of the best-abused but most beneficent of professions!

Tooth-wash.—Tooth-washes prepared with soap-bark as a base are not injurious to the teeth. Among the published formulæ, we select the following, giving the proportions according to Hager:—*Bennet's Tooth-wash*—Quillaia, in moderately coarse powder, 20 parts; glycerin, 20 parts; diluted alcohol, 9·5; oil of gaultheria, 9·5; oil of peppermint, 20·0. Macerate the quillaia with the glycerin and 180 parts of diluted alcohol, and enough of the oils to flavour the mixture, for twenty-four hours, occasionally agitating. Then filter and add enough diluted alcohol to make the product weigh 200 parts. *Meyer's Tooth-wash.*—Quillaia, in moderately coarse powder, 50 parts; peppermint water, 300 parts; alcohol, 300 parts. Macerate for a few days, then add cochineal, powdered, 1 part; peppermint water, 100 parts; glycerin, 100 parts; oil of gaultheria, 1·5 parts. Again macerate during the day, occasionally shaking. Finally add enough peppermint water to make 1,000 parts. Lastly filter.

Dr. Nichols' Penny Vegetarian Cookery-Book.—Every household should possess this marvel of cheapness. Free for 1½d.—Nichols & Co., 23, Oxford-street, London, W.—[Advt.]

# The Family Circle

"The child is father of the man."—*Wordsworth.*
"In bringing up a child, think of its old age."—*Joubert.*

## OUR MEDICAL NOTEBOOK.

EASY HINTS FOR THE TREATMENT OF COMMON COMPLAINTS.

**Loss of Voice in Singers and Speakers.**—For this affection Dr. Corson recommends the patient to put a small piece of borax (two or three grains) into the mouth and let it dissolve slowly. An abundant secretion of saliva follows. Speakers and singers about to make an unusal effort should the night before take a glass of sugared water containing two drachms of potassium nitrate (saltpetre) in order to induce free perspiration. In similar circumstances this gargle may also be used :—℞ Barley water, six ounces ; alum, one or two drachms ; honey, half an ounce. Mix, and use as a gargle. Or, again, an infusion of jaborandi, made by putting two scruples of the leaves in a small cup of boiling water, may be drunk in the morning before getting up. The free sweating is said very quickly to restore the strength of the voice.

**The Treatment of Poisoning by Chloral Hydrate.**—Chloral has, unfortunately, come prominently to the front as a drug, taken indiscriminately, often without medical sanction, and in doses of poisonous nature. It is useful, therefore, to bear in mind the chief facts involved in the treatment of cases of poisoning by chloral. The object should be to overcome the tendency to death. First evacuate the contents of the stomach ; then treat according to this scheme :—To stimulate heart : Caffein citrate, strychnia, digitalis, atropia, brandy (by the skin and by the bowel), amyl nitrite (inhalation), carbonate of ammonia (injected into a vein). To maintain temperature : Wrapping in blankets, hot bottles to feet and body. To stimulate respiration : Electricity (applied to phrenic nerve), oxygen (inhalation). To clear the mind : Shaking, talking, douche to head, strong coffee *by the bowel.* Never give beyond 1-10 grain of atropia in all. The pulse, not the pupil, should be the guide as to when enough has been given. Strychnia may be given freely, 1-20 grain, followed by 1-30 or 1-40 grain or even more in an hour's time if no improvement shows itself, should be given subcutaneously. If the dose of chloral has been large, the strychnia may be used in larger doses.

**Spiders' Webs as a Remedy in Ague.**—This old remedy, remarks a medical contemporary, seems again to be coming to the front. In the *Gaceta Medica* of Seville there is an article upon the subject, and also in the *Correspondencia Medica.* In the latter journal 93 cases are mentioned, and Dr. Oliva gives 26 more in the *Gaceta Medica.* Of these, 22 were cured with the powdered web, two with the tincture and the powder, and the remainder with the tincture alone. The web is prepared in the following manner. It is gathered with great care, and is shaken to remove the dust, washed, dried in the sun, and powdered. The powder thus obtained is of a dark ash colour, without smell or taste, insoluble in water, and very slightly soluble in alcohol. From examination of the 119 cases which have hitherto been published, Dr. Oliva draws the following conclusions :—1. Arachnidina (cobweb) possesses the power of curing malarial fevers, and always when they are of a quotidian and tertiary type. 2. That when administered in the dose of two grammes to adults, or one to children, it generally stops the illness at the second fit. 3. Its action is less prompt than that of sulphate of quinine ; for this reason, until we get more data regarding the medicine, it should not be employed in pernicious intermittents. 4. That in consequence of its tastelessness it is more easy to administer than quinine, especially to children. 5. That its use lessens the tendency to relapses.

**Bread Pills in Hysteria.**—A case is recorded by Drs. L. Landouzy and S. Bellet of the sudden cure of hysterical contraction in a patient, by the administration of so-called *pilules fulminantes* or bread pills. The patient was 26 years old, and had been well until she was attacked with "St. Vitus's Dance" after fright at the age of 20. A second attack, which lasted five months, was caused by a fright at 24. A third attack followed vaccination on admission into the hospital a short time afterwards. This was followed by contraction of both legs, which for eight months rendered her completely helpless. She developed a craving for morphia injections, which were at last stopped, and in their place bread pills prescribed. The patient, having been warned of the violence of the remedy, took, with suicidal intent, four times the prescribed dose, and presently exclaimed, *Je sens encore les entrailles qui me bouillent, mais voyez mes jambes !* The patient left the hospital cured three weeks later.

**The Medicinal Value of Vegetables.**—A celebrated cookery-book discusses the medicinal value of vegetables, as follows :—"Asparagus is a strong diuretic, and forms part of the cure for rheumatic patients at such health-resorts as Aix-les-Bains. Sorrel is cooling, and forms the staple of that *soupe aux herbes* which a French lady will order for herself after a long and tiring journey. Carrots, as containing a quantity of sugar, are avoided by some people, while others complain of them as indigestible. With regard to the latter accusation, it may be remarked in passing, that it is the yellow core of the carrot that is difficult of digestion—the outer or red layer is tender enough. In Savoy, the peasants have recourse to an infusion of carrots as a specific for jaundice. The large sweet onion is very rich in those alkaline elements which counteract the poison of rheumatic gout. If slowly stewed in weak broth, and eaten with a little Nepaul pepper, it will be found to be an admirable article of diet for patients of studious and sedentary habits. The stalks of cauliflower have the same sort of value, only the stalk of a cauliflower is too often so ill-boiled and unpalatable that few persons would thank you for proposing to them to make part of their meal consist of so uninviting an article. Turnips in the same way are often thought to be indigestible, and better suited for cows and sheep than delicate people ; but here the fault lies with the cook quite as much with the root. The cook boils the turnip badly, and then pours some butter over it, and the eater of such a dish is sure to be the worse for it. Try some better way. What shall be said about our lettuces ? The plant has a slight narcotic action, of which every French old woman, like every French doctor, well knows the value ; when properly cooked it is really very easy of digestion."

**Cod-liver Oil.**—The following formula is useful in disguising the taste of this valuable medicine :—Cod-liver oil 96 grammes, iodoform 20 centigrammes, essence of anise four drops. The addition of the last two articles completely masks the taste and smell of the oil. Patients to whom the preparation is still repugnant may add to each spoonful of oil a very small quantity of salt, which modifies its taste and facilitates its digestion.

**Castor Oil for Children.**—The following is recommended as a pleasant form for children :—Castor oil, 1 drachm ; glycerine, 1 drachm ; tincture orange peel, 20 drops ; tincture of senega, 5 drops ; cinnamon water to make up half-an-ounce mixture.

## COMMERCIAL CURIOSITIES.

Mr. Hillier, of Kew Museum, writes in *Land and Water:* Under the above heading, a few weeks back, "W. H." referred to the comparatively unheard of names of various products imported into this country. Probably the following few notes on several mentioned by him may be of interest to some of your readers :—

"Jowaree," the Indian name for the fruits of *Sorghum vulgare*, an annual extensively cultivated in Southern Europe, the Mediterranean region, Egypt, Syria, India, Guinea, and other parts of tropical Africa; used as food corn.

"Piassava" or "Piassaba."—Brazilian names of the fibre obtained in Bahia from the leaf stalks of *Attalea funifera*, and in Para of that from *Leopoldinia piassaba*, the latter affording a finer and more valuable kind of piassaba. Both are used in the manufacture of street brooms, brushes, &c.

"Argols."—The concrete sediment or incrustation of wine vats from which tartaric acid is produced.

"Animi" or "Copal" is a hard resinous substance like amber, afforded by several tropical trees, the principal of which are *Trachylobium Hornemannianum* of Zanzibar, and *T. verrucosa* of Madagascar, used for making copal varnishes.

"Olibanum" or "Frankincense" is produced by two or more species of *Boswellia*, natives of E. Africa, used in the preparation of incense.

"Myrabolaus" or "Myrobalaus," the Indian name of the fruits of *Terminalia chebula* and *T. celerica*, common in India, Malay, Fiji, and other islands of the Pacific, largely imported into this country for tanning purposes, as also for dyeing black by calico printers. They are highly astringent.

"Kittool."—The name of the fibre obtained from the leaf-stalks of *Caryota urens*, a palm, native of Ceylon and India, used for making ropes, brooms, baskets, &c.

"Coir."—The fibre obtained from the husk of the cocoanut, from which the cocoanut matting and various other articles are manufactured.

"Orchella Weed."—The name of several species of *Roccella* (notably *R. tinctoria*), a genus of lichens valued for dyeing. Some samples in the Great Exhibition of 1851 were estimated to be worth £380 per ton. At one time the average annual imports of this dye weed amounted to 6,000 tons. It is found on the maritime rocks of hot or warm temperate regions.

"Danga" or "Gunjah."—The Indian name of the dried hemp plant, *Cannabis sativa*, an annual native of India and Persia, which is smoked like tobacco.

"Gumdadar" (? Dammar) is the name of the resin produced by species of *Dammara* belonging to the fir family, found in the Malayan Archipelago and New Zealand. It is used for many purposes. This name is also applied to several resin-producing trees of India, viz., *Hopea micrantha*, *Canarium strictum*, the latter affording the black dammar of commerce, &c.

"Silkworm Gut."—A speciment of this in the Kew Museum was obtained from silkworms fed upon the leaves of *Liquidambar Formosiana* of Formosa.

"Sandrac," or "Sandarach," is the name of the odoriferous resin of *Callitris quadrivalvis*, a native of Algeria and other parts of Northern Africa. It is used in varnish-making.

"Buchu," or "Bucku," is the Hottentot name for the fragrant leaves of three or more species of *Barosma* belonging to the rue family, natives of the Cape, where they are used in medicine and put in brandy to form Bucku brandy, and for various other purposes. They are used in this country in diuretic affections and for promoting perspiration.

"Cop Matee."—Probably this is a name for Maté, or Paraguay tea (*Ilex Paraguayensis*), a native of South America, where it is calculated the average annual consumption amounts to 8,000,000 lb. per annum.

Perhaps some other readers can enlighten us as to what "chindrons," "spada farnta," and "chussum" are.

Sanitary Inspections.—Fee for Survey and Report, in London, 2 Guineas. Estimate given and Improvement Works carried out when required.—The Sanitary Engineering Co., 115, Victoria-street, Westminster, S.W.—[Advt.]

## MEAT AND SCIENCE.

At a recent meeting of the Royal Society, an interesting communication was read, entitled a "Supplement to former Paper entitled 'Experimental Inquiry into the Composition of some of the Animals Fed and Slaughtered as Human Food'—Composition of the Ash of the Entire Animals and of certain Separated Parts." By Sir John Bennet Lawes, Bart., LL.D., F.R.S., F.C.S., and Joseph Henry Gilbert, Ph.D., LL.D., F.R.S., V.P.C.S.

In a former paper (*Phil. Trans.*, Part II., 1859) the authors had given the actual weights, and the percentage proportion in the entire body, of the individual organs, and of certain more arbitrarily-separated parts, of 326 animals —oxen, sheep, and pigs—in different conditions as to age, maturity, fatness, &c. They called particular attention to the wide difference in the proportion by weight of the stomachs and intestines in the three descriptions of animal; the proportion of stomach and contents being very much the highest in oxen, considerably less in sheep, and little more than one-tenth as much in pigs as in oxen. On the other hand, the intestines and contents contributed a less proportion to the weight of the body in oxen than in either sheep or pigs, the percentage by weight in pigs being nearly twice as high as in sheep, and more than twice as high as in oxen. With these very characteristic differences in the proportion of the receptacles and first laboratories of the food, the other internal organs collectively, as also the blood, contributed a pretty equal proportion by weight of the entire body, in the three descriptions of animal.

Ten animals had been selected for the determination of the chemical composition, namely—a fat calf, a half-fat ox, and a fat ox; a fat lamb, a store sheep, a half-fat sheep, a fat sheep, and a very fat sheep; a store pig, and a fat pig. In these, in the collective carcass parts, in the collective offal parts, and in the entire bodies, the total nitrogenous (or flesh-forming) substance, the total fat, the total mineral matter, the total dry substance, and the water were determined; and the results were recorded and discussed in detail.

It was shown that, as the animal fattened, the percentage of nitrogenous substance decreased considerably, whilst that of the fat and of the total dry matter increased in a much greater degree. It was estimated that the portions of well-fattened animals which would be consumed as human food would countain three, four, and even more times as much fat as dry nitrogenous substance: and comparing such animal food with wheat-flour bread, it was concluded that, taking into consideration the much higher capacity for oxidation of a given weight of fat than of starch, such animal food contributed a much higher proportion of non-nitrogenous substance, reckoned as starch, to one of nitrogenous substance than bread. In fact, the introduction of our

staple animal foods to supplement our otherwise mainly farinaceous diet did not increase, but reduced the relation of the flesh-forming material to the respiratory and fat-forming capacity of the food.

Finally, the actual amount and the percentage of total ash in most of the internal organs and some other separated parts were given. It was shown that the percentage of total mineral matter, like that of the nitrogenous substance, decreased not only in the entire body, but especially in the collective carcass parts, as the animals matured. It was the object of the present communication to record the results of the complete analysis of the ashes of the collective carcass parts, of the collective offal parts, and of all parts of each of the ten animals. Forty complete ash analyses had been made.

As was to be expected, more than four-fifths of the ashes consisted of phosphoric acid, lime, and magnesia; these making up the largest amount in the ash of the oxen, less in that of sheep, and less still in that of pigs. Potash and soda were also prominent constituents. Assuming, for the purposes of illustration merely, that one of phosphoric acid was combined with three of fixed base, the ashes of the ruminants showed an excess of base; whereas, according to the same mode of calculation, the ashes of the pigs showed no such excess.

It was, unfortunately, only in the case of the offal parts of the pigs that the ash of the chiefly bony and that of the chiefly soft parts had been analysed separately. The results showed a considerable excess of acid, especially phosphoric, in the ash of the non-bony portions; presumably, in part, at any rate, due to the oxidation of phosphorus in the incineration. In further reference to the point in question, it may be stated that, although the oxen and sheep show a higher percentage of total nitrogenous substance than the pigs, yet, owing to the relatively small proportion of bone in the pigs, the amount of ash yielded from the non-bony parts is higher in proportion to that from the bones in their case than in that of the ruminants.

Comparing the percentage composition of the ashes of the entire bodies of the different animals, the chief points of distinction were that in the ash of the pigs there is a lower percentage of lime and a higher percentage of potash and soda than in the corresponding ash of the ruminants; there is a somewhat higher percentage of phosphoric acid in the ash of the pigs and of the oxen than in that of the sheep; and there is a higher percentage of sulphuric acid (and somewhat of chlorine also) in the ash of the pigs than in that of the other animals.

A table showing the quantities of total ash, and of each individual mineral constituent, in each of the ten animals analysed, was given. Not much stress was laid on the amounts in the particular animals analysed, as the actual weights and condition of animals coming under similar designations may vary considerably.

It was of more interest to consider the amounts of the mineral constituents in carcass parts, in offal parts, and in all parts per 1,000 lb. fasted live-weight, of each description of animal.

It was shown that a given live-weight of oxen carried off much more mineral matter than the same weight of sheep, and a given weight of sheep much more than the same weight of pigs. With each description of animal the amounts of phosphoric acid, lime, and magnesia are less in a given live-weight of the fatter than of the comparable leaner individuals. Of both potash and soda, again, the quantity is less in a given live-weight of the fatter animals. The same may be said of the sulphuric acid and the chlorine; in fact, in a greater or less degree, of every one of the mineral constituents.

It was estimated that the loss to the farm of mineral constituents by the production and sale of mere fattening increase was very small. It was greater of course in the case of growing than of only fattening animals. In illustration, the amounts of some of the most important mineral constituents removed annually from an acre of fair average pasture and arable land in various products were compared. Such estimates could obviously be only approximate, and the quantities will vary considerably. With this reservation it may be stated that, of phosphoric acid, an acre would lose more in milk, and four or five times as much in wheat or barley grain, or in hay, as in the fattening increase of oxen or sheep. Of lime, the land would lose about twice as much in the animal increase as in milk, or in wheat or barley grain; but perhaps not more than one-tenth as much as in hay. Of potash, again, an acre would yield only a fraction of a pound in animal increase, six or eight times as much in milk, twenty or thirty times as much in wheat or barley grain, and more than a hundred times as much in hay.

From the point of view of the physiologist, it would doubtless have been desirable that the selection of parts for the preparation and analysis of the ash should have been different, and more detailed. The agricultural aspects of the subject had, however, necessarily influenced the course of the inquiry; and the extent of the essential work had enforced the limitation which had been adopted. The results must be accepted as a substantial contribution to the chemical statistics of the feeding of the animals of the farm for human food.

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The Uses of Boric Acid.—The acid is generally required in powder for medicinal uses, yet not always so, and therefore care should be taken to order it in powder when wanted in that condition. An order simply for boric acid will and always should bring it unpowdered. For many of its recent uses in medicine it is required in very fine powder, and such is the only powder that should be sold. With care, in a proper mill it makes a beautifully white light powder, entirely free from particles when rubbed between the finger and thumb, feeling very much like powdered soap. It is only such powder that will answer well in eye-surgery, or in general surgery for dressings; and solutions, when required, are most easily and best made from this powder. A solution saturated at ordinary temperatures contains between 4 and 5 per cent.; and from 10 grains in the fluid ounce up to saturation it is frequently used as an eye-wash, or to granulating and suppurating surfaces in general. It is a very bland and soothing application, whether applied in powder or in solution, relieving irritation and reducing suppuration. It is a very potent antiseptic, probably equal to salicylic acid, and is much less expensive; and its advantages over carbolic acid for some purposes are chiefly that it is odourless and more easily managed. For the preservation of hypodermic solutions, it is probably better than either salicylic or carbolic acids, though comparative experiments are still needed to determine this. In surgical dressings, it has the great advantage over carbolic acid, that it is not irritant nor poisonous in any quantity that has been applied. Not being at all volatile, however, it has no effect in cleansing or deodorising the air. It has been administered internally in large doses without any disturbing effects, but only by a very few observers, so that little is known of its internal uses.

The "Spécialité" Lime Juice, for family daily use throughout the year, has not the usual musty flavour; will not turn mouldy; may be obtained of Chemists and Grocers.—Feltoe & Sons, Albemarle-street, London, W.—[Advt.]

# Healthy Houses

"A happy home must be a healthy home."—*Anon.*

## THE UNSANITARY HOMES OF THE RICH.

By C. F. Wingate.

(From the *North American Review.*)

I.

Sanitary science is one of the oldest of the sciences. The hygienic laws laid down by Moses and Hippocrates are to-day just as applicable as they were two thousand years ago, and only need adaptation to our complex civilisation. Nevertheless, progress in the practical application of sanitary principles has not been rapid. It has kept pace with the advance of knowledge, but this has, of necessity, been slow and disappointing. Until newspapers began to be widely diffused there was no means of popular enlightenment, and even now people are apathetic about hygienic matters, and neglect the "ounce of prevention," nowhere else so vitally important.

It is only thirty-five years since the first comprehensive health law was enacted in Great Britain; and it was not until the criminal blundering of the Crimean War, and the death of Prince Albert, that the English public were awakened to the need of sanitary reform. Much had been previously done to improve the condition of hospitals, prisons, and factories. Smoke nuisances had been abated, and graveyards in crowded cities closed. Domestic sanitation was, however, an unworked field, which is only now beginning to be cultivated. The principle laid down by Dr. Carpenter, that "the house is the unit of sanitary work," had not been accepted. Building details had been left to the architect; and it was not until medical men awoke to the alarming spread of zymotic disease, due to bad drainage, that people began to question the providential theory of disease, and to raise the warning cry, "Look to your drains."

The most surprising fact is, that while the evils complained of have been found in both city and country houses, and in the homes of rich and poor alike, yet they have been most destructive to life and health in the finest residences here and abroad. The same ignorance and thoughtlessness which led Peter the Great to select a flooded marsh as the site of his imperial capital, are repeated in the arrangements of the noblest European palaces. Viollet-le-Duc relates that he had occasion to visit the Tuileries with an old lady of the "ancien régime," who noticed with satisfaction what to him were insufferable odours from certain sanitary conveniences in the building, and said that they recalled to her the time before the Revolution when she was a maid of honour. After the death of Prince Albert, his usual study seat was found to be directly over a cesspool, whose emanations were undoubtedly the cause of his disease. The almost fatal illness of the Prince of Wales at Sandringham was ascribed to a like cause. The ancient palace at Darmstadt, where the Princess Alice was carried off by diphtheria, was afterwards found to have many leaky drains and unventilated cesspools. Within a year Bagshot Park, the newly built residence of the Duchess of Connaught, supposed to be perfect in its sanitary arrangements, has been discovered by Dr. Playfair to be filled with sewer-gas. These experiences of royalty show in the most vivid way how little attention has been given to the sanitary arrangements of the costliest and most palatial dwellings. Mr. Rawlinson, the eminent English engineer, declares that Belgravia is the worst sewered part of London, and that the drainage of the Government offices and official residences in Downing-street is so indescribably bad that he would rather resign than live there.

These statements are sufficiently startling, but they are no worse than the known facts about the finest residences in the United States. Much has been written and said of late years about the wretched homes of the poor of New York, their squalor, their filth, and the moral and physical degradation of their occupants. All are familiar with the harrowing descriptions of the barracks and slums in which a large proportion of the population of the metropolis live and in which so many of them die. Little, however, has been heard of the unsanitary homes of the rich; and it seems paradoxical to declare that the defects of the costliest houses on Murray Hill rival those of the tenements of Baxter-street. New York is the commercial centre of the country. The daily transactions of its clearing-houses mount up to millions. Its docks swarm with shipping from all parts of the world, and its warehouses overflow with merchandise from the Ganges, the Thames, the Golden Gate, and the Amazon. Millionaires jostle each other in Wall-street, and bonanza and railway kings are as common as blackberries there. To house the possessors of this wealth, the finest dwellings that architectural taste can design are being erected all over Manhattan Island, many of them of imposing dimensions, palatial in their adornment, and seeming to lack nothing to promote comfort, enjoyment, and health. Yet I venture to say that a large number of these houses are mere whited sepulchres, and their luxurious inmates are exposed to constant risk of disease and death. The story of the rich man who tore down his barns and built greater ones, has a parallel in hundreds of cases, where the possessor of wealth, acquired by years of persistent labour in mining, manufacturing, commerce, or speculation, comes to New York to enjoy his gains, buys a mansion, adorns it in æsthetic style with costly frescoes, rich upholstery, elaborate carving, and bric-à-brac, and then has some member of his family stricken with sickness, due to sanitary defects in or near the dwelling.

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An analysis of the population of Paris just published, shows that medicine, in its branches, supports 18,000 persons; the branches of course including chemists and all compounders and vendors of medicine.

Dust in the Eyes.—And up the nose! We wonder would it be "putting people to an enormous expense" if the contractors who—occasionally—remove the dust from bins where it has been long left to become putrid, were required to provide some sort of covers to their carts! At present it is something worse than a nuisance to have these carts lumbering and jolting over the stones in the streets without any sort of cover. A "smell" means the application of particles of odorous material to the mucous membrane of the nose. It follows that, when the horrible stench which rises from the contents of these carts makes itself known to the passer-by, he actually takes into his nasal cavity a certain amount of the putrefying animal and vegetable matter which is so offensive. The consideration is not a nice one. A very simple cover, consisting of two shutters falling together in the centre, would suffice to prevent the wind from wafting the fetid and probably morbific products of desiccated organic matter about. Will any sanitary authority consider this?—*Lancet.*

"The Money Question Considered." E. W. Allen, 4, Ave Maria Lane, E.C. The money question in connection with the State purchase of Railways. "A small pamphlet full of facts." By post, 1½d.—[Advt.]

# Jottings from the Journals

"Th' ingredients of health and long life are
Great temperance, open air,
Easy labour, littl care."—*Sir Philip Sidney.*

Death from Cold in Mammals.—The behaviour of protoplasm under the influence of different degrees of temperature is still insufficiently known. We are familiar with the general facts that excessive heat or cold brings about death, and that fever is attended with increased tissue changes; and in some measure we understand the kind of way in which this happens; but that is all. MM. Richet and Rondeau have studied the influence of cold on some mammals. They have adopted a method by which the temperature of the animal has been gradually lowered. Dogs resist cold so well that no experiments were made on them. Rabbits were chiefly employed in these investigations. These animals were shaved and surrounded with flexible pewter tubes, through which cold water was made to circulate. When the temperature of the body was lowered to 23° C. respiration began to be ineffectual. The rhythm was not modified; but the amplitude of the inspirations was chiefly diminished. The functions of the nervous system were much abated when the temperature fell to 17° C.; they were not, however, abolished. Reflex movements were obtained, even when the temperature sank to 15° or 14° C; and the observers believe that the excitability of the nervous system disappeared not directly on account of the cold, but probably from arrest of the circulation. Spontaneous movements disappear before the reflex acts. The reflex from the cornea of the eye went before those from the lower limbs. At 16° C. the reflexes were remarkably slow, and like those in animals with a cold circulation. Sensibility to pain was not abolished even at the temperature of 16° C. Cold gradually slowed the cardiac action. The form of the contraction at 17° C. was like that of the heart of the tortoise. Systole (or contraction) commenced at the auricles, and by a slow vermicular movement passed on to the ventricles. Even although death had been apparent for half an hour, the animal could be restored to life; so that vitality can be recalled half an hour after the cessation of respiration and circulation. When the temperature was 19° C. it took more than ten minutes to asphyxiate the rabbit by blocking the trachea. We may conclude from this that tissue change is correspondingly slow. The same animal was suffocated in four minutes at a temperature of 32° C. MM. Richet and Rondeau commented on the similarity between the vital processes of hibernating animals and those of rabbits thus experimented upon, in which a condition, so to speak, of artificial hibernation may be induced.—*Lancet.*

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Animal Electricty.—Dr. McKendrick, so well known for his physiological researches, delivered an able and interesting lecture on Galvani and Animal Electricity before the Southport meeting of the British Association, on Monday last. In summing up, the lecturer said that all these electrical changes were really expressions of the vital changes occurring in living tissues under the action of stimuli. It was no part of the functions of nerves, muscles, or of the retina of the eye to produce electrical currents under the action of their relative stimuli; but such currents indicated chemical changes in the organs or tissues. For example, the contraction of a muscle is a movement following or consequent upon many chemical changes, among the results of which were the production of heat and differences of electrical potential. Thus, there was no special production of electricity except in the cases of electrical fishes, and possibly of some other animals. In most animals, including man, the production of currents was an incidental phenomenon, indicating chemical operations and nothing more. Besides, the currents so produced were feeble and evanescent, and bore no relation to the general well being. Consequently, all attempts to influence the living body by magnets had no rational basis. It need hardly be said that the so-called phenomena of animal magnetism are of an entirely different kind from those discussed. These are of a subjective character, dependent on peculiar states of the nervous system, having nothing whatever to do with electricity or magnetism; but still in a sense they are phenomena as real as those of physical science. Their subjective character, however, renders them specially difficult of investigation, and consequently they are more liable to fall into the hands of the charlatan.

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Poisoning from Cobwebs.—In cases of cut fingers and similar wounds it is not advisable to apply cobwebs. At Geldern a servant-girl did so lately, and an extensive swelling of the finger and the hand generally ensued. It was found necessary to amputate the finger, otherwise the girl would have died from blood-poisoning.

# Our Bookshelf

"Reading maketh a full man."—*Bacon.*

## THE MICROSCOPIC STRUCTURE OF THE BODY.

*Manuals for Students of Medicine*: Elements of Histology, by E. Klein, M.D., F.R.S. Illustrated with 181 Engravings. (Cassell & Co., Limited, 1883. Price 6s.)

Although this handy volume forms one of a series intended for the instruction of medical students, it will nevertheless also appeal to the intelligent general reader

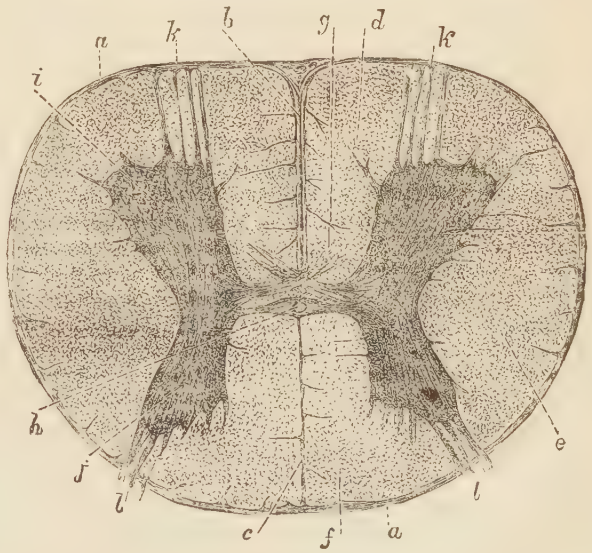


Fig. 1.—Magnified Cross Section of the Spinal Cord.

as a manual of instruction in the minute build of the body. The number of persons who use the microscope as a pleasure-giving pursuit in ordinary life is yearly on the increase. Many persons possess, not merely a microscope

of sufficient power wherewith to show the chief facts of bodily structure and to demonstrate the main points of interest in the form of lower animals and of plants, but also exhibit the skill necessary for the display of microscopic objects and for their due preservation in the home-museum of curiosities. A microscope is a great educator, when properly used; and there are none who do not enjoy a peep through the veritable wonder-glass which shows us how nearly the infinitely little approaches to the infinitely great. There can be no higher or more interesting method of training the young in the facts of life and nature than that of teaching them the fashion in which living beings are built up from and by apparently small and insignificant particles. Doubtless some experience and training are necessary to enable the student to perfectly understand what he sees; but the skill which is necessary is not difficult to acquire, and experience in the methods of microscopical inquiry is by no means the exclusive property of the professional mind.

Dr. Klein's book will be welcome to a larger class of readers than is included under the designation of "medical students." The book is not merely a masterpiece of clear writing, but the numerous engravings which adorn its pages

Fig. 2.—A Nerve Cell from the Spinal Cord (magnified).

assist the reader in the highest degree in comprehending at once the beauty and the interest of the study of the minute in living beings. To understand how the processes of life are carried on, it is absolutely necessary that we should acquire a knowledge of the microscopic structure of the living body. After all, the essentials of life's processes lie in the minute ways and works of living things. In knowing how the gastric juice of the stomach is secreted, how the saliva or "water" of the mouth is made, how bile is formed in the liver, what the brain is and how nerves act—to know, in short, how all the processes of life proceed—a knowledge of what the microscope teaches is absolutely necessary. If any book can aid the student of physiology in acquiring such knowledge, the volume before us will serve such an end. Dr. Klein is everywhere a trustworthy guide to the mysteries of human structure; and his book is one of the most interesting which has of late years been issued from the scientific press.

In illustration of Dr. Klein's method, we may note his description of the spinal cord—the great central nervous trunk which lies securely protected within the backbone, and which is really in one sense a continuation downwards of the brain itself. As shown in Fig. 1, a cross section of the spinal cord teaches us that it consists of an outer part of *white matter* (*d*, *e*, *f*, *g*), and an inner part of *grey matter* (*i*, *j*). The latter consists of *nerve cells*, and the former of *nerve fibres*. It is the nerve cells which originate the

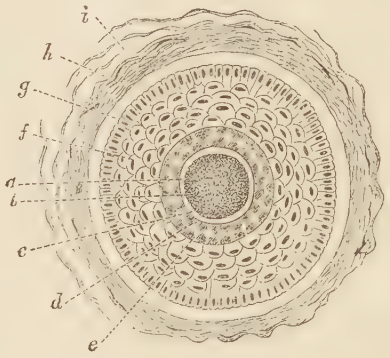


Fig. 3.—Cross Section of a Hair and its Sac.

nervous impulses, while the nerve fibres convey these impressions. In Fig. 2, a *nerve cell* from the grey matter of the spinal cord is shown. Here we see the cell containing pigment or colouring matter (*b*), and giving off processes, one of which (*a*) in time becomes the main part of a nerve. These nerve cells are, in fact, the batteries of the nervous telegraph system, while the fibres are the wires. The spinal cord itself is enveloped in membranes corresponding to those which invest the brain. The innermost layer is the *pia mater*, shown at *a*, Fig. 1. We also see, in this cross-section of the spinal cord, how that structure is nearly completely divided into two distinct halves. Within it the grey matter (*i*, *j*) assumes the shape of a capital H, and through the cross-part (which unites the two "limbs" of the letter) we find a small canal (*h*) running throughout the length of the cord. It is through this wonderful structure that the nervous impulses shoot to and from the brain; while we know that the spinal cord itself, when detached from the brain, is able, by means of its "nerve-cells," to act as an independent nervous centre. Through-

Fig. 4.—Structure of Dog's Salivary Gland.

out his description of the entire nervous system, Dr. Klein is clear and terse. It is no slight aid to the student of physiology to discover in such a volume as that before us a mass of exact information regarding a most abstruse part of the anatomy and build of our frame.

Passing now to a widely different part of our frames, we arrive at the skin and its appendages, the hairs. Here (Fig. 3) is a cross section made by Dr. Klein, through a human hair and the "follicle," or sac, in which it is developed. In such a view, we see outside all the *fibrous coat*

(*h*) of the hair-sac. Inside this coat we find what is called the *glassy membrane* (*g*), and then succeeds the *outer root-sheath* (*f*), which is the principal part of the hair-sac. The *marrow* of the hair is seen at *a*, its *bark* at *b*, and its skin, or outer layer, at *c*. A hair is thus seen to be a highly complex structure, and to exhibit an arrangement of parts such as the uninitiated observer would hardly bargain for. The patient industry of science is, however, equal to the demonstration of the foregoing parts in the hair-structure, and the development and growth of the hair become clear to us when the exact nature of the structure has become known.

The *salivary glands*, or those which manufacture the *saliva* or "water" of the mouth, present an interesting structure. As shown in Fig. 4, where a section has been made through part of a salivary gland of the dog, we are enabled to see that the gland is composed of collections of cells arranged in clumps. It is these minute "cells" which manufacture the "water" of the mouth, and which, taking the blood as their raw material, elaborate its elements into the familiar secretion of the mouth.

Technical although this volume may appear to those who have not yet advanced beyond the mere rudiments of physiological science, we deem its presence on the book-shelf of the microscopical student an absolute necessity. Many points in the history and appearance of living tissues and organs will become clear after the lucid explanations of Dr. Klein are studied. To all who feel interested in the part played by "cells," "fibres," and other elements in the formation of our frame, this volume will teem with facts which form the only sound basis for a knowledge of the more intricate problems of the living body.

# Our Letter : Box

"Conference [maketh] a ready man."—*Bacon.*

*NOTICES TO CORRESPONDENTS.*

*All Communications for the Editorial Department (including specimens of Sanitary Appliances, &c.), to be addressed to* "THE EDITOR OF HEALTH," 74-76, *Great Queen-street, London, W.C. Those intended for the Publishing Office to be sent to* "THE PUBLISHER," *at the same address.*

*Contributors are requested to send stamps for the return of the* MSS. *in event of non-acceptance. Every care will be taken to ensure the safety of* MSS., *but the* EDITOR *and* PUBLISHERS *cannot hold themselves responsible for accidental loss.*

*Correspondents are requested to write on one side of the paper only. The* EDITOR *disclaims responsibility for the opinions expressed by Correspondents.*

## LETTERS TO THE EDITOR.

### LECTURES TO THE MASSES.

SIR,—By the kindness of the Trustees of the Gilchrist Fund, the Committee of the Royal Victoria Coffee Hall have been able to arrange for the delivery of six penny science lectures by eminent lecturers on Tuesdays, beginning on Oct. 2. The success of the Gilchrist lectures in Scotland and the North of England is remarkable, thousands of operatives being attracted by them. In some cases some of the audience have followed the lecturer from one town to another to hear the same lecture again. The Committee are, therefore, anxious that lectures such as these, which are rarely within reach of London working men, should be made widely known beyond the circle of the usual frequenters of the Hall, and the Honorary Secretary would be glad to hear from any one willing to help by getting a poster hung up, or hand-bills distributed among working men in districts within reach of the Vic.

The lectures (which are to be illustrated by oxy-hydrogen lanterns, and in the case of the first two by experiments as well) are to be as follows:—

Oct. 2 & 9. (Two lectures) by William Lant Carpenter, Esq., F.C.S., on "Ice, Water, and Steam."

Oct. 16. P. N. Carpenter, Esq., on "Life under the Ocean Wave."

Oct. 23. E. H. Knobel, Esq., Sec. R.A.S., on "Comets."

Oct. 30. C. A. V. Conybeare, Esq., on "The Rights and Feelings of an Animal."

Nov. 6. Dr. B. W. Richardson, M.D., LL.D., F.R.S., on "Food and Feeding."—Yours faithfully,

EMMA COUS, *Hon. Sec.*

Royal Victoria Coffee Hall, Waterloo-road, Oct. 4, 1883.

### "BATHERS' CRAMP."

SIR,—How are the public to be better informed if the teachers are ignorant of a subject which they pretend to explain? An article has just appeared with the above heading in one of your medical contemporaries. Now, in the first place, there is no such thing as "bathers' cramp," that is to say, that what is commonly understood as "cramp," viz., a contraction of the muscles, is not peculiar to bathers and swimmers, in the same sense as that in which we speak of "scrivener's," or "writer's," cramp, a term which is perfectly intelligible, the affection being due to excessive use of the fingers in writing. It has been stated on very good authority that it is a popular error to ascribe the majority of drowning accidents to "cramp;"—that is mostly the conclusion that is arrived at in cases in which the real cause of the fatality is not inquired into. But it has been explained that various other dangers threaten ignorant or careless persons who enter the water under conditions dangerous to health and life.

A letter appeared in the *Times* a few weeks ago from the hon. sec. of the London Swimming Club, pointing out the mistake concerning "cramp" as a common cause of drowning. That letter was followed by two or three others from writers who entirely endorsed those views.

The writer of the article in the medical journal alluded to, who adopts the misleading term "bathers' cramp," refers, in the course of his remarks, to various kinds of cramp—for instance, "true muscular cramp of the classical kind," "muscular spasm," and "cramp in the ordinary acceptation of the term." Well, I think the last-named is the only kind of "cramp" that should be described by writers who wish to caution reckless bathers and swimmers against more serious dangers. The ordinary cramp is the only kind recognised and understood by the public generally—viz., the seizure, mostly in the lower extremities, from contraction of the muscles; and this I have been told by expert swimmers does not impede their movements in the water; so when an unfortunate person goes down "like a stone" in the water, apoplexy is most probably the cause, or collapse of the lungs, or congestion of some other organ. Let us leave "classical cramp" to the ancients, or to the medical schools. And as for "true" cramp, I was not aware that there was a *false* kind, in the same way as "pseudo-croup," &c. But the ordinary cramp is what the public understand, and "bathers' cramp," as a distinct affection, has no existence. I should say, before concluding, that the attention of the *Lancet* was called to the subject, and a very sensible article appeared in that journal two or three weeks ago, entirely upholding the views herein expressed concerning the cramp fallacy.—I am, sir, faithfully yours,

M. A. B.

### TOILET RECIPES.

SIR,—In reference to the recipes for various toilet preparations on pages 394 and 395 of your journal, will you permit me to point out for the benefit of your readers that those for the Rose and Almond Bandoline, Crême de Mauve, Hungarian Cosmetic (Pomade Hongroise), Bay Rum, Amandine, Olivine, Almond Paste (properly called Honey and Almond Paste), Rose Milk (Milk of Roses), Frangipanni Sachet Powder, Heliotrope Sachet Powder, are all to be found, expressed in simple English weights and measures, in Piesse's "Art of Perfumery." It is also advantageous to note that the groups, occur in the same order, as in most cases do also their constituents, whereby reference is facilitated. I am now engaged in re-editing this volume, the last edition of which was produced in 1879, under the supervision of my lamented father, its author.—Your obedient servant,

CHARLES H. PIESSE, F.I.C.,

Oct. 5, 1883. Public Analyst and Physician.

## QUERIES AND ANSWERS.

### GENERAL.

B. GRIMSTONE.—There is no such person. The name is only an assumed one.

A. K.—The man is a "quack," pure and simple. No respectable medical man advertises himself by means of prurient pamphlets distributed in the streets.

C. Cargill.—See Dr. Cathcart's article in Health, No. 26.

Amor.—The term pollen is applied to the fertilising yellow dust of flowers, matured in their stamens.

Beechy Head.—Evidently a mistake, for which the writer of the article alone is responsible. Write to the editor of the magazine.

Cambria.—Regarding fermentation, read Tyndall's "Floating Matter of the Air."

M. Sanderson.—The belt you send is another of the magnetic frauds that were exposed in Mr. Carpenter's second and third papers (Aug. 24 and 31). It can produce *absolutely no* electricity when worn on the person. Galvanic and electric is an utter misnomer. Mr. Carpenter inquires where it was bought and what it cost?

## SANITARY.

B. Alcock.—Hinckes Bird's plan was described in "Notes by the Way," in last number of Health.

Cairns.—Try "Sanitas" fluid in the bath.

Kurious.—Due to the germs of the fungus passing into the rain water, and afterwards vegetating from drippings in the wall.

James Allan.—Inquire of the manufacturers.

Constant R.—The decision has not been rescinded, and therefore stands legally as a precedent.

Ergo.—For a few days at most.

Christchurch.—It is still a disputed point whether cows fed on sewage-farms may give contaminated milk. In the absence of definite information, better to avoid any risk. The water you mention is decidedly suspicious. The worm-infection is either through unwashed vegetables or through drinking a bad water directly.

Cathcart.—Parke's "Practical Hygiene;" Wilson's "Healthy Homes" (Churchill); Corfield's "Health" (Kegan Paul & Co.); the "Health" Primers of the Society for Promoting Christian Knowledge. If this list is not sufficient, we can enlarge it for you.

An American.—Address your inquiry to the Medical Officer of Health of Sheffield. The Health Returns will likely be published in the local newspapers; but the medical officer will afford all necessary information.

R. Somerville.—We do not know the publication you speak of. Can you not afford us some definite clue to its author?

## MEDICAL.

L. F. Clow.—The article directed that the 5 per cent. solution should be diluted so as to be no stronger than 1 per cent. nor weaker than ½ per cent. See foot of page 359 Health, where full directions are given, and where a couple of teaspoonsful of the solution are to be diluted with four or five times the bulk of water. The directions are perfectly clear.

Farnworthian.—Certainly; you will regain health and strength. Fear nothing, and in addition to the tonic (which should not be taken continuously) remember to try the effect of cold sponging, generous diet, and exercise. Have no fear of your future.

Age Twenty.—Some irregularity of living (chill as often as not), too much exercise (or too little), stimulants, &c. Take a little "Æsculap" water every morning, attend to cleanliness, and avoid chills.

R. C. B.—A common case of indigestion. Take the aperient water recommended to "Age Twenty" above; give up tea and coffee; see to the ventilation of your room; and take rest. After food take a little Morson's "Pepsine." Write again if not relieved. See also to your teeth.

Scotsman.—See replies to "Rab" in No. 25 Health; also to "Victor" in No. 26. Get rid of your fears, and know that time and care will accomplish your cure. Keep out of the way of quacks.

Alpha is informed that according to our invariable rule (stated weekly in our notices to correspondents) queries addressed to us on postcards are consigned to the waste-paper basket. Re-address the inquiry per letter.

Matthias.—A belt would be of no service in the case you name. Read reply descriptive of asthma and treatment to "W. Garth," in Health No. 20. Yours is a case for the wise selection of suitable spectacles. (Write to Mr. Browning, 63, Strand, London, for his method of suiting the sight.) Give up night-work for a time.

Remorse.—See advice to "Scotsman" above. Be cheerful and live wisely, as directed. You will soon recover your health. Write again if not improved.

D. W. Lowe.—Consult a good aural surgeon. The discharge from the ear is probably connected with inflammation of the drum. A consultation may relieve you by putting you in the way of complete cure. Inquire at any of the leading surgical instrument-makers in London regarding the appliances (Weiss, 62, Strand; Pratt, 43, Oxford-street, W.; or Krohne & Seesmann). By seeing an ear-surgeon first, you may be saved the expense of an instrument.

St. Mungo.—We cannot advise you to have anything to do with the phosphorus-preparations you name. We should advise in your case, the taking of a little Morson's Pepsine (as directed on the bottle) with your food. Give up tea and coffee for a time, and try milk instead. If not improved write again.

Rural.—Give up all stimulants, and let your dietary be light and nutritious—fish, milk, eggs, &c.—and follow advice given to "St. Mungo" above. A teaspoonful of Fellows' Syrup of the Hypophosphites, taken thrice daily before food in a wineglassful of water, is likely to benefit you.

W. Wadely.—You should have the boy examined by a competent physician, who alone can determine, by such examination, the exact nature of the "fits." We counsel you to seek such advice as soon as convenient, inasmuch as proper treatment, immediately applied, may benefit or cure him.

H. Aldons (This is the nearest we can go to your signature).—Yes, the advice to "Fylde," may be followed in your own case. We cannot undertake to send copies of Health to correspondents.

Dolly.—See paragraph regarding removal of freckles in Health, No. 26, page 6.

W. B. J.—See advice to "J. Sharp," in present number of Health. Take the tonic recommended to "J. F. J.," below. Cold sponging should also be tried.

Tristis Hermis.—We fancy your general health must be out of order. Why not try the effect of a little cod-oil and a fatty dietary at large? The lady you name has certainly undertaken a work of magnitude. We shall look curiously to see if, on publication, it meets her description of its scope. The "muscle-beating" is good in theory, but will require to be carefully carried out in practice.

Benedictus.—1. You entirely mistake the nature of the secretion you speak of. It is entirely harmless. You should take the tonic recommended to "J. F. J." in present number of Health, and have full confidence in your future. Yours is a common case, which time and care will entirely cure. You are only a little excitable and nervous, and your general health is below par. The tonic recommended will do you good. 2. Thanks for the cutting. The coroner's inquest seems to have been rather a confused affair. Why was there no medical evidence? It seems the patient was choked, not by the oyster, but by false teeth, if the newspaper report is to be believed.

A. J. Shaw.—Your teeth appear to be the primary cause of your ill-health. Consult a good dentist. Nothing can be gained by your attempts to obtain relief in any way short of having the teeth put right by professional aid. Many a case of obstinate ill-health owes its origin to neglected teeth.

Edinburgh.—In such a case as yours, great care must be exercised. The medical advice you had was of the best description. We imagine from your description that when your general health becomes re-established the attacks you speak of will disappear. The attacks depend on the same condition of your nervous system to which the paralysis is due. Under the circumstances, therefore, we regard your case as one in which careful watching by a medical man is necessary. Electricity, judiciously applied, might do good.

J. Sharp. Don't alarm yourself; you will get quite well in time, and, indeed, at present you suffer from no disease. Sleep on a hard mattress, take no fluids late at night, moderate exercise, cold sponging each morning, and the tonic recommended to "Rural," in present No. of Health. Don't get in the way of quacks.

Caput.—1. Read our papers on the "Hair," contained in the first three monthly parts of Health (which consist of the weekly numbers bound). If you fail to find the necessary information therein, write again. 2. For the face pimples, live temperately, and try the following, to be made up by a druggist:—Sulphide of calcium, 2 grains; sugar of milk, 40 grains. Make 20 pilules. One to be take every three or four hours for a week.

J. T. N.—1. For the head-pains, try 15 grains bromide of potass, dissolved in a wineglassful of water, for a few nights on going to bed. 2. We cannot reply to your second question without knowing more of your symptoms, habits, &c. We may say, however, that from your account, we feel inclined to agree with the medical opinion.

Thorax.—We think the pain is purely muscular, or possibly a little pleurisy. Wear a warm porous plaster for a week or two. The exertion at the baths is much more likely to have caused the pain than the crowd. Warmth and support by a plaster will relieve you. If not relieved, write again.

Sewell.—Nothing to be detected in the skin. Try the effect of a little pure Vaseline applied to the part each night, and well rubbed into the palm.

H.—Write to Mr. Browning, 63, Strand, London, for his method of sight-testing. Give your eyes rest, and try a pair of preservers for a time, as an aid to the sight. Give up all night-reading.

Scottie.—Merely a sign of a little weakness, which should cause

you no alarm. Follow advice to "J. Sharp," in present number of HEALTH. Beware of quacks. The "Hunter" firm is notorious.

WAVERLEY.—Your symptoms are those of indigestion. Look to your general health. Avoid eating late at night, and try a little Morson's Pepsine with your food, as directed on the bottle. If not improved, write again.

J. CORNWELL.—See advice to "Caput" (2) in present number.

NEMO (No. 2.).—We do not think onion-juice would be of the slightest use in snake-bite. The poison there acts instantaneously, and often defies all remedies, however powerful.

H. F. (HILLHEAD.)—What you mention is of common occurrence in health. You certainly do not suffer from the disease you name. Let no one persuade you that you are ill. Follow advice to "J. Sharp" above, but you may omit the tonic, as you are in good health.

A FEARFUL ONE.—We should advise you to consult a good physician, and lay your case plainly before him. The dryness depends, we should fancy, more on a mental or nervous than on a physical cause. Attend well to your general health, but a case like yours demands a medical consultation. You have our warmest sympathy.

H. F. P. L.—The prescription would do no harm; but the acid therein would not, we think, be wholly beneficial in your case. Try the following:—Carbonate of bismuth, 1½ drachms; carbonate of magnesia, 1½ drachms; mucilage of tragacanth, 1½ ounces; water to make up 8 ounces. Two tablespoonfuls every four hours, a quarter of an hour before meals. 2. Give the Macassar oil a fair trial. (Have you read our "Hair" papers?) 3. The Fuller's wool is very good, and would be preferable, we fancy, to the "Papier." (Please address all inquiries regarding the numbers of HEALTH to the publishers.)

A. HAMILTON.—In your case we regard rest as the sheet-anchor of your cure. Try the tincture of iodine again, and you might also try the effect of a good-fitting elastic bandage. By rest now, you may save after-pains.

A. HUGGAN.—The case you mention is one of general debility, in which indigestion plays a prominent part. We should recommend the use of Morson's "Pepsine" (as directed on the bottle) along with the food, and the food should be light and nourishing,—milk, eggs, puddings, &c.; no tea or coffee. If not improved under this treatment, write again.

JACOBUS.—1. Don't eat late at night, and follow advice given to "A. Huggan" above. 2. Give the little patient cod-liver oil with syrup of iodide of iron added (any druggist will add the iron for you). The child is suffering from general debility, and if you attend to advice just given and take her for a while to the seaside (Trinity or Portobello), keeping her warmly clad, you may find she will improve. If the cod oil and iron disagree with her, try the cod-liver oil emulsion. In lieu of the latter, give plenty of rich cream, milk, &c.

CARADOC.—See advice to "J. Sharp" above. By exercising your common-sense and living a healthy life you need have no fear for the future.

COMMERCE.—No; so long as you are careful to take moderate exercise and avoid stooping-habits you need have no fear. The pains are either muscular or arise from indigestion. Look to your general health and clothe warmly. Glad to be of further service, if need be.

J. F. J.—Don't tamper any more with injections. Take a teaspoonful of "Fellows' Syrup of Hypophosphites" thrice a day before meals in a wineglassful of water. That will act as an efficient tonic—which you require. As a mild aperient try "Freidrichshall" or "Æsculap" water, when necessary, in the mornings.

A. WARD.—Yours is a case which comes under the description in our "Hair" papers of those in which attention to the general health will be of more benefit to the hair than any lotions. Rub Macassar oil night and morning into the roots, and attend to your health. You may benefit from the use of the tonic recommended to "J. F. J." above. Glad to advise again, if necessary.

LIDA.—No drug should be taken constantly. Alternate the bismuth for a time with "Morson's Pepsine." You take the bismuth in a correct fashion, but you must look to your health, so as to avoid the necessity for continual drugging. Examine your dietary carefully, and try to discover which foods agree best with you. 2. The tumours are "wens," readily removable by surgical aid.

P. T.—Your weakness of sight clearly arises from over-study. You must be careful lest you injure your sight. The amount of study you indulge in now exhausts your physical powers. We can only say work less and rest more. No medicine can brace you up against the hard work you are at present engaged in.

IVY.—1. Try the remedy for the face eruption recommended to "Caput" in present number. 2. Apply pure Vaseline to the eyelids each night. Write again if not improved.

SOUTH PLACE.—Probably constitutional; but try the tonic recommended to "J. F. J." above as a nerve-stimulant, and see what effect it has on your health.

J. ELKINGTON.—If the opposite side is normally developed, there need be no fear. Such a new development on one side does not preclude functional activity; and what you mention regarding the habits shows that the function must be active and normal in character.

J. N. MERRIMAN.—You may not always be troubled, but even if you are, there can be no disease present. Cold sponging and moderate exercise should relieve you, so long as you remain in your present condition. The interval you name is perfectly consistent with health. The secretion you mention as occasionally appearing is not what you suppose it to be. You are quite well—endeavour, by attention to the general health, to keep so.

TRIAL.—You should purchase Dr. Schüssler's pamphlet of Messrs. Newberry, and read therein what he says. If you fail to get the information you require, we can obtain it for you from a private source. Why do you not obtain the cell-salts as directed in the letter to which you allude?

A. M. S.—Such an ulcer requires careful surgical treatment to obviate the risk of bleeding. See a surgeon, and have it properly dressed.

JOD.—The treatment is rest; and the part should be bathed with a lotion composed of extract of belladonna, one scruple, and water, four ounces. Wear a bandage so as to support the part.

J. H.—We have never heard of any feasible objection to the shirts, unless when too much clothing is worn, they become damp through the perspiration. Our favourite method of winter clothing is a somewhat light Jersey flannel next the skin and a heavier flannel shirt over that. In winter a cotton or linen shirt over the light Jersey is not a sufficient protection in our climate.

RUFUS.—Try the inhalations recommended to "W. Scott," in No. 24 of HEALTH. In your case, a teaspoonful of cod-liver oil thrice daily would be advisable.

TREBLA.—Your note replied to. One of the chains might do you good and is worth a trial.

ACTONIAN.—We do not think you need fear in the least that your affection will attack a vital part. With care, it will certainly not do so. We should imagine that hot salt baths would benefit your foot; and you might try such. Write again after a trial. Avoid all stimulants meanwhile and all acid foods.

A. M. P. HERBERT.—Why not seek some interesting leisure occupation? You don't require medicine. Interest yourself in some pursuit or study. One of the best cures for a case like yours is a walk or two through the slums of a city, and the observation of the masses who would esteem your life and your position an enviable one. Seek cheerful society; and if you feel low in health, try a change of air.

PICTOR IGNOTUS.—1. No; a perfectly healthy occurrence. 2. Tends, we think, to check the discharge.

C. E. BUTLER.—Any surgical instrument maker or druggist will supply you with the necessary injection apparatus. Can be performed by yourself.

NEMO.—Treatment by cod-liver oil and by iron—such as: cod-liver oil, six ounces; syrup of iodie of iron, 3 drachms; mucilage acaciæ, one ounce. A tablespoonful thrice daily. Clothe warmly; avoid all tendency to chills; and seeking medical advice whenever any symptoms appear.

OREGON.—Yours is a case for a careful examination by a consulting physician. The symptoms you name may arise from a variety of causes; and our advice is that you should apply at one of your hospitals and undergo a thorough examination. The "food" symptoms appear to us to be connected specially with the stomach; but only a medical examination can solve the problem.

E. G. C.—Try the effect of the treatment by the inhalations recommended to "W. Scott," in No. 24, HEALTH. The following will also do good:—Carbonate of ammonia, one drachm; tincture of spills, 3 drachms; compound tincture of camphor, half-an-ounce; infusion of senega to make up six ounces. A tablespoonful every four hours.

CARDIA.—Try the effect of giving up your tobacco. The use of tobacco increases the tendency you name. Electricity is not advisable in your case. See to your diet, in the way of exact regulation.

ONE WHO WANTS TO KNOW.—1. We doubt if any exercises would help you in the matter of the wrist. Try the effect of a nerve-tonic recommended to "J. F. J." in present number of HEALTH. Piano-practice might help you, or type-writing with a machine. At the Zander Institute, Soho-square, you may find machines which will aid you. Visit the Institute, and inspect the machines. 2. The ear-disease should be treated by an aural surgeon. The "drum" is often perforated after scarlet fever.

J. THOMPSON.—We think you should try cod-liver oil emulsion for a time, and indulge in some light exercise with dumb-bells or

clubs. Cold sponging the chest and friction with a flesh-brush would also do good. Take moderate walking exercise, retire to rest early, and do not rise over early.

C. Todd.—The "yawning" is simply indicative of weariness and exhaustion. There is no special significance attachable to the habit. After due rest, the tendency passes off. Try the tonic recommended to "Rural," in present number if you are in any way low in health.

B. L. Perthshire.—See advice to "J. F. J." in present number, and, in addition, pay great attention to cleanliness.

Nemo (St. Neot's).—Symptoms those of general indigestion. See notice to "Waverley" in present number. Your food must be light—milk-pudding, eggs, &c. Give up tea, coffee, and stimulants for a time. Rest from great exertion for a time also, and take only moderate exercise.

H. Seymour.—Try the tonic recommended to "J. F. J." in present number of Health. If not improved, send us a further description of your case.

Sidney.—Try the simple treatments by inhalations recommended to "W. Scott," in No. 24 of Health. Clothe warmly and avoid chills.


CAUTION.

The ignorance of the public in Electrical matters is daily taken advantage of by unscrupulous would-be competitors of Pulvermacher's Genuine Electro-Curative Appliances.

In order to be protected against these harpies, patients should apply at once for Pulvermacher's pamphlet (just left the press), in which they will find undeniable proof of what is genuine and what is false.

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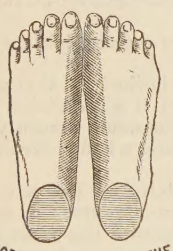

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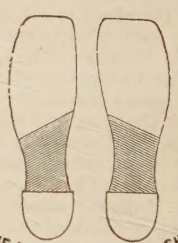

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